SERVICE MANUAL

FISHER

STEREO HIGH FIDELITY SYSTEM

PH-W804L

(EUROPE)

142 484 05

SPECIFICATIONS

Power Source
- AC 120/220V
- DC 12V
- (UM-1, HP2, D Cell, Monozelle, R20)x8

Max. Output Power 5Wx2
Power Consumption 24W
Current Consumption (at Vol. Min.)
- Record mode 200mA
- Playback mode 150mA
- Fast Forward mode 160mA
- Rewind mode 170mA

Recording System ..... AC Bias
Erasing System ..... AC Erasing
Tape Speed ..... 1-7/8ips. ±3%
Wow & Flutter ..... 0.15% (WRMS)
Torque
- Playback ..... 30 ~ 55g-cm
- Fast Forward/Rewind ..... 55 ~ 120g-cm

Fast Forward/Rewind Time ..... 175sec. (with C-60)
Frequency Response (Overall)
- Fe_2O_3 ..... 100Hz~12,500Hz

Erase Ratio (Overall, with Fe_2O_3) 60dB
Signal to Noise Ratio (with Fe_2O_3) 40dB
Crosstalk (with Fe_2O_3)
- Track to Track 50dB

Channel Separation (with Fe_2O_3) 30dB
Harmonic Distortion (K3/with Fe_2O_3) 3%
Hum & Noise (at Vol. Min.) ..... −60dBs
Oscillation frequency 85kHz
Output Level and Impedance
- Headphones 32Ω

Frequency Range
- FM ..... 87.5~108MHz
- SW ..... 5.9~15.5Mz
- MW ..... 531~1,602kHz
- LW ..... 153~281kHz

– Specifications and design are subject to change without notice. –

REFERENCE No. WM-22346

CABINET PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	620 185 1649	Individual Carton	1
	620 148 3727	Case Styrofoam Top	1
	620 148 3734	Case Styrofoam Bottm	1
	620 148 9514	Poly Cover	1
	620 148 9521	Poly Cover	2
	620 152 7445	Serial No. Sheet	2
ACCESSORIES			
	620 023 7284	Power Cord	1
	620 148 5912	Poly Cover 110 x 220	1
	620 187 5348	Poly Cover	1
	620 152 2624	Certificate Card	1
	620 153 1787	Label Caution	1
	620 185 1755	Instruction Manual	1
CABINET			
	620 188 0823	Wire Assy Receptacle	1
1	620 024 5029	Rod Antenna	1
2 ⚠	620 025 2164	Power Trans [T901]	1
3	620 051 4316	Screw	1
4	620 185 0505	Cabinet Top Assy	1
5	620 075 6082	Handle Assy	1
6	620 083 1864	Gear Eject Assy	2
7	620 183 5410	Cabinet Bottom	1
8	620 094 8272	Lid Cassette Left	1
9	620 094 8289	Lid Cassette Right	1
10	620 096 5941	Window Lid Cassette Left	1
11	620 188 3046	Window Lid Cassette Right	1
12	620 098 0746	Lid Battery	1
13	620 107 5694	Knob Function	2
14	620 109 6064	Knob Volume Left	2
15	620 111 9480	Knob Power Switch	1
16	620 111 9497	Knob Surround A	1
17	620 111 9503	Knob Surround B	1
18	620 111 9510	Button Select EJECT1	1
19	620 111 9527	Button Select Play	2
20	620 111 9534	Button Select REW	2
21	620 111 9541	Button Select FF	2
22	620 111 9558	Button Select Pause	2
23	620 111 9565	Button Select High Speed	1
24	620 111 9572	Button Select Dubbing	1
25	620 111 9589	Button Select Record	1
26	620 111 9596	Button Select EJECT2	1
27	620 111 9862	Knob Push	1
28	620 112 2008	Knob Tape Select	2
29	620 115 4382	Bracket Button A	1
30	620 115 4399	Bracket Button B	1
31	620 115 4405	Bracket Button C	1
32	620 121 8152	Spring Battery	1
33	620 121 8299	Spring Battery	1
34	620 121 8503	Spring Battery	2
35	620 121 9555	Terminal Anode	1
36	620 122 8366	Screw Poly Wave	2
37	620 128 5031	Belt Counter	1
38	620 129 2695	Lever Power Switch	1
39	620 129 3517	Spindle Button	1
40	620 135 6076	Counter	1
41	620 139 1268	Spring Terminal	1
42	620 139 1862	Spring Lid Cassette Left	1
43	620 139 1879	Spring Lid Cassette Right	1
44	620 184 0490	Shield Plate	1
51	620 185 3599	Amplifier P.C.B. Assy	1
52	620 080 6565	Graphic EQ. P.C.B. Assy	1
53	620 080 6596	Battery P.C.B. Assy	1
54	620 183 4130	Control Tuner P.C.B. Assy	1
55	620 183 4154	Radio Tuner P.C.B. Assy	1
56	620 185 3605	Power P.C.B. Assy	1
61	411 021 3107	SCR S-TPG BIN 2.6X8	2
62	411 023 4003	SCR S-TPG PAN 3X10	13
63	411 023 4201	SCR S-TPG PAN 3X10	4
64	411 023 4508	SCR S-TPG PAN 3X12	3
65	411 023 6304	SCR S-TPG PAN 3X20	4
66	411 001 1703	SCR S-TPG PAN 3X30	6
67	411 040 4802	SCR PAN 2.6X8	1
68	411 002 9005	SCR PAN 3X8	1
69	411 002 9104	SCR PAN 3X8	2

Ref. No.	Part No.	Description	Q'ty

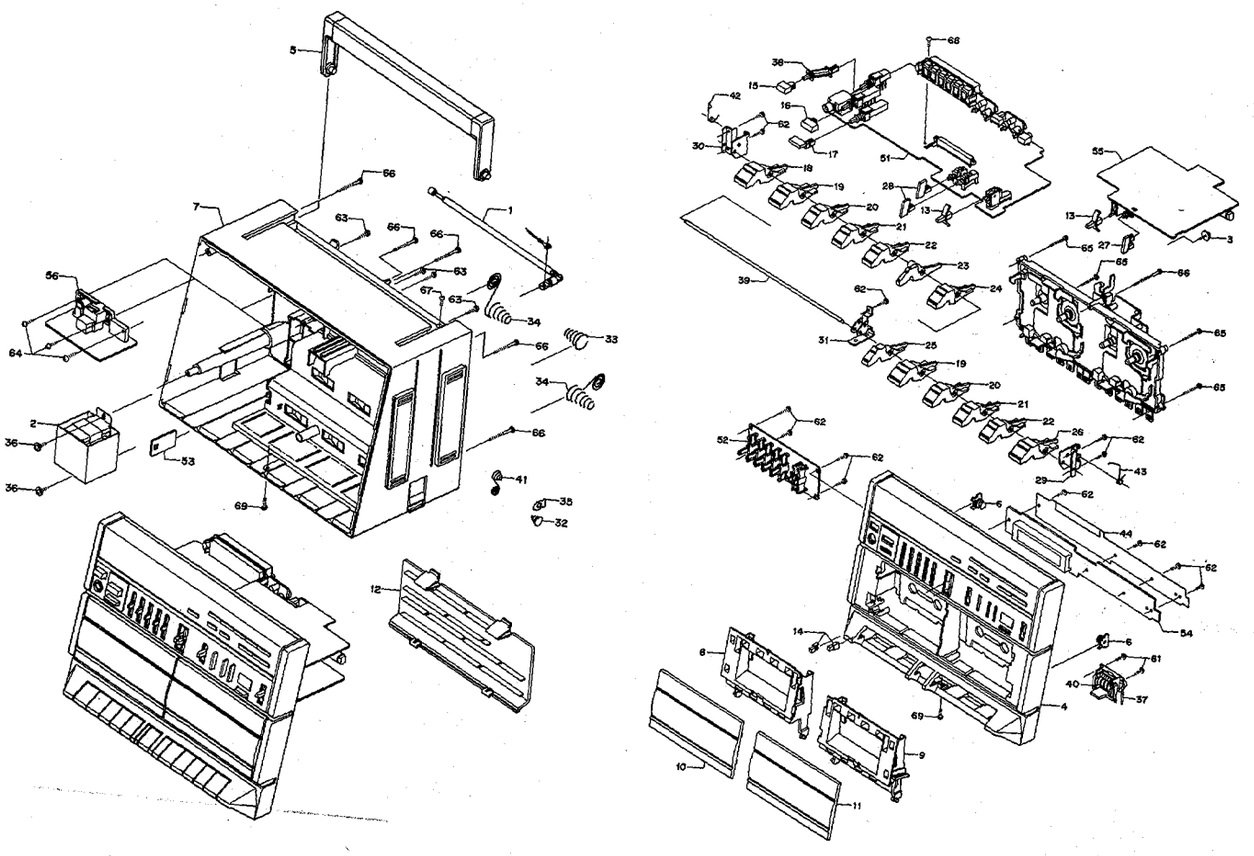
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CABINET EXPLODED VIEW



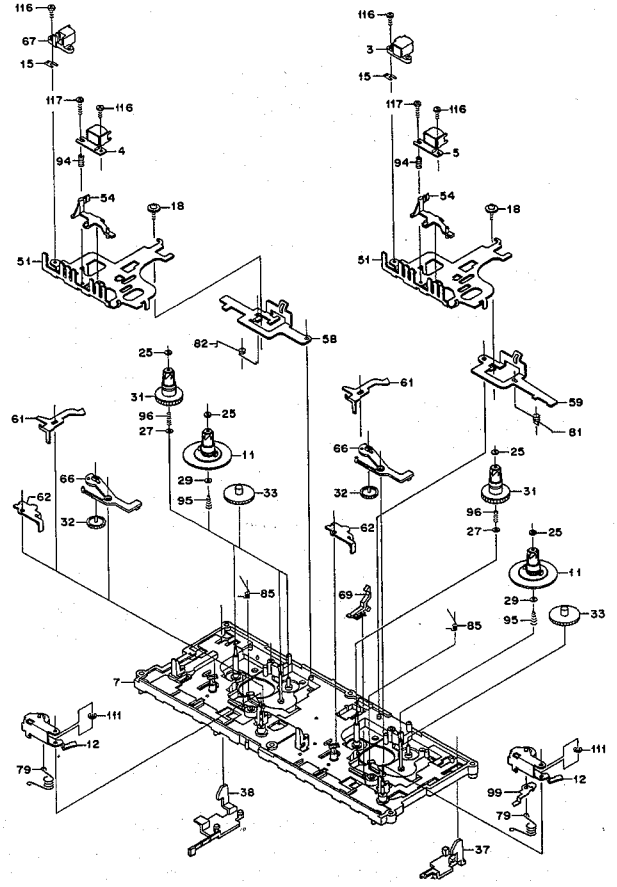
MECHANISM PARTS LIST

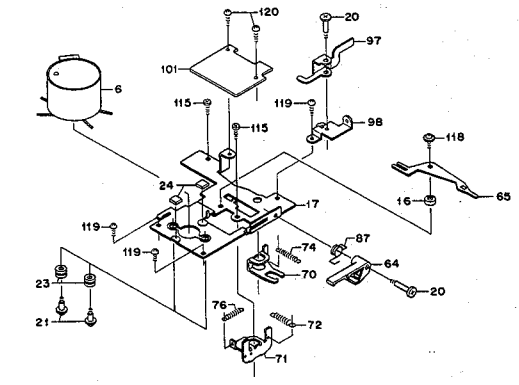
Ref. No.	Part No.	Description	Q'ty
MECHANISM			
	620 125 8424	Wire Band	7
	620 125 8103	Lug	1
	620 018 0597	Connector 1P Assy	1
	620 018 0375	Connector 3P Assy [CN1]	1
	620 018 0382	Connector 3P Assy [CN2]	1
	620 018 0542	Connector 2P Assy [CN3]	1
1	620 016 2630	Leaf Switch [S309]	1
1	620 016 2630	Leaf Switch [S310]	1
1	620 016 2630	Leaf Switch [S311]	1
2	620 016 7925	Lever Switch [S312]	1
3	620 023 5112	Erase Head [HD3]	1
4	620 023 6270	Play Head [HD1]	1
5	620 023 6409	R/P Head [HD2]	1
6	620 030 4245	Motor [M801]	1
7	620 081 5581	Chassis Assy	1
8	620 082 1346	Bracket Rod Assy	1
9	620 082 6792	Flywheel Complete	1
10	620 082 6853	Flywheel Complete	1
11	620 082 8741	Fix Take-up Assy	2
12	620 082 9885	Pinchroller Assy	2
13	620 083 2502	Idler Assy R/P	1
14	620 083 2519	Idler Assy P	1
15	620 119 3718	Spacer Head	2
16	620 119 7211	Spacer	1
17	620 121 6011	Bracket Motor	1
18	620 122 6324	Screw Washer, +M2.6X6	2
19	620 122 7277	Screw Washer, +M2.0X6	2
20	620 122 9264	Screw, +M2.6X3.2	2
21	620 122 9356	Screw, Pan Hd. w/Washer +M2.6X1.5	2
22	620 123 0710	Screw, +M2X6.5	1
23	620 123 9942	Cushion Motor	2
24	620 124 5530	Cushion	2
25	620 125 1630	Washer M1.5X3.5X0.4	4
26	620 125 2163	Washer M2.1X5.0X0.13	2
27	620 125 3054	Washer M2.1X3.5X0.13	2
28	620 125 3078	Washer M2.1X3.5X0.25	2
29	620 125 3948	Washer M2.1X4.1X0.25	4
30	620 125 6512	E Ring	2
31	620 126 6009	Fix Supply Reel	2
32	620 127 7647	Gear Take-up	2
33	620 127 7678	Gear F FWD	2
34	620 128 6328	Belt Wind	2
35	620 128 6335	Belt Drive R/P	1
36	620 128 6342	Belt Drive P	1
37	620 130 5197	Plate Lock Lid Left	1
38	620 130 5203	Plate Lock Lid Right	1
39	620 130 5227	Rod Stop Eject Right	1
40	620 130 5234	Rod Pause	2
41	620 130 5241	Rod F FWD	2
42	620 130 5258	Rod Rewind	2
43	620 130 5265	Rod Play	1
44	620 130 5272	Rod Record	1
45	620 130 5289	Rod Dubbing	1
46	620 130 5296	Rod Speed Switch	1
47	620 130 5302	Rod Stop Eject Left	1
48	620 130 5326	Plate Switch Motor Left	1
49	620 130 5333	Plate Switch Motor Right	1
50	620 130 5340	Plate Lock	2
51	620 130 5364	Base Slide	2
52	620 130 5869	Plate Amplifier Switch	1
53	620 130 6378	Rod Play	1
54	620 131 8517	Lever Sensor ASO	2
55	620 131 8616	Lutch Pause	1
56	620 131 8623	Lever Play	1
57	620 131 8630	Lever Stopper Record	1
58	620 131 8647	Lever Cassette Fix Left	1
59	620 131 8654	Lever Cassette Fix Right	1
60	620 131 8678	Lever Dubbing	1
61	620 131 8692	Lever ASO	2
62	620 131 8708	Lever Cue Review	2
63	620 131 9064	Lutch Pause	1
64	620 131 9071	Lever Cancel Pause	1
65	620 131 9781	Lever Link	1
66	620 132 4662	Arm Take-up	2
67	620 136 0608	Guide Tape	1
68	620 136 1278	Spacer Brake	1
69	620 136 3852	Interlock Lever	1
70	620 136 5320	Lever Speed Switch	1
71	620 136 5375	Lever R/P Switch	1
72	620 136 6082	Spring Rewind Roller	1
73	620 136 6235	Spring Shut-off Lever	1
74	620 136 7072	Spring Lever Cassette Lid	1
75	620 136 8888	Spring Lever Head	1
76	620 137 2076	Spring Base Slide	1
77	620 137 8139	Spring Rod Pause	1
78	620 137 8146	Spring Rod	3
79	620 137 8160	Spring Pinch Roller	2
80	620 137 8177	Spring Pause Latch	2
81	620 137 8191	Spring Cassette Lock Right	1
82	620 137 8207	Spring Cassette Lock Left	1
83	620 137 8221	Spring Rod Stop	1
84	620 137 8238	Spring Stop Record	1
85	620 137 8382	Spring Take-up	2
86	620 137 8801	Spring Arm Idler	2
87	620 137 8825	Spring Lever Cancel	1
88	620 138 7599	Spring Eject	1
89	620 139 0643	Spring Lever Auto Shut-off	2
90	620 139 0919	Spring Plate Motor	2
91	620 139 1039	Spring Rod Base	2
92	620 139 2715	Spring Pulley	2
93	620 139 3774	Spring Base Slide	2
94	620 139 3835	Spring Head	2
95	620 139 3866	Spring Reel	2
96	620 139 3880	Spring Supply	2
97	620 136 4552	Lever Record	1
98	620 136 5979	Bracket R/P Switch	1
99	620 131 9347	Lever Arm Pinch	1
101	620 080 6589	Control P.C.B. Assy	1
111	411 015 9009	RING E 2	2
112	411 021 0205	SCR S-TPG BIN 2X12	3
113	411 021 0809	SCR S-TPG BIN 2X6	1
114	411 021 3107	SCR S-TPG BIN 2.6X8	1
115	411 023 3303	SCR S-TPG PAN 2.6X8	2
116	411 030 6403	SCR BIN 2X5	4
117	411 030 7509	SCR BIN 2X7	3
118	411 037 3801	SCR PAN+W 2.6X6	1
119	411 002 6004	SCR PAN 2.6X6	3
120	411 006 5102	SCR TPG PAN 2.6X8	2

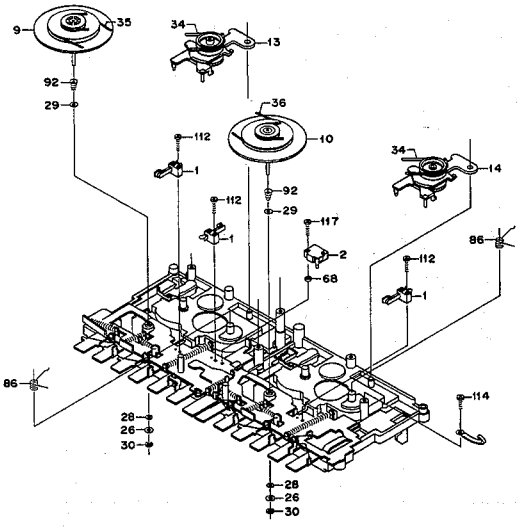
NOTES:

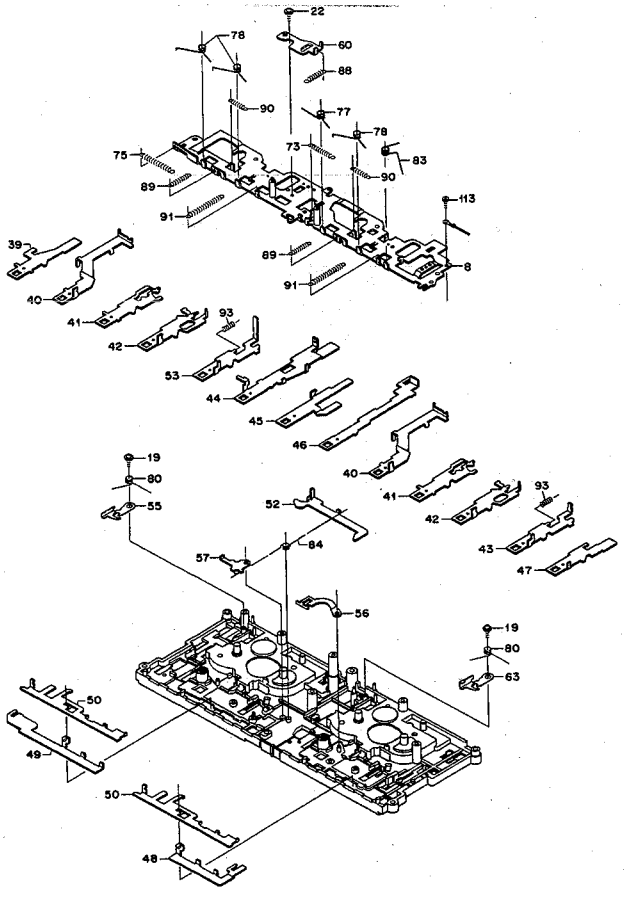
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

MECHANISM EXPLODED VIEW









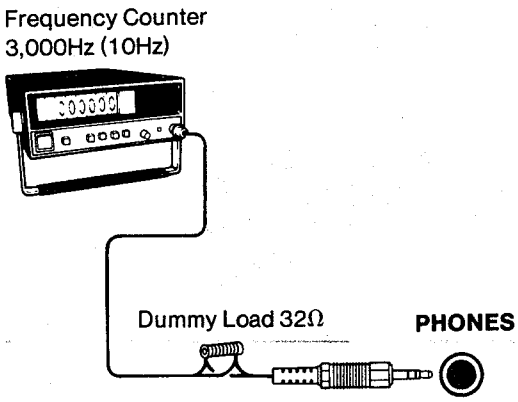
ELECTRICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- VTVM (2 sets)
- Frequency Counter
- Dummy Load (32Ω)
- Dualtrace Oscilloscope
- DC Constant-voltage Regulator
- Test Tapes
  - ‡ 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  - ‡ 10kHz Test Tape (Example: TEAC MTT-114) for Head Azimuth Adjustment
- Alignment Tool

TAPE SPEED ADJUSTMENT

1. Connect a frequency counter to the left or right channel output of the headphone jack as illustrated. Then, insert a 3kHz test tape (Example: TEAC MTT-111) into the cassette compartment.



2. Detach the Cabinet Bottom and adjust the tape speed by slowly turning the P601 in the CONTROL P.C.B. until the frequency counter reads 3,000Hz (±10Hz).

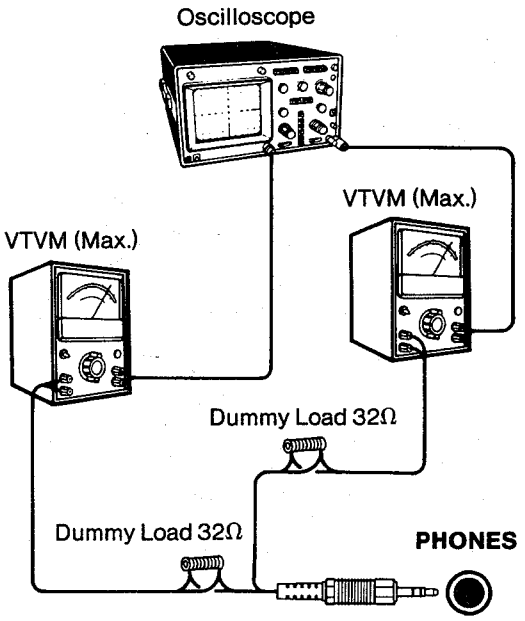
HEAD AZIMUTH ADJUSTMENT

Detach the cassette compartment lid from the unit and connect a dualtrace oscilloscope and a VTVM to both channel outputs of the headphone jack as illustrated.

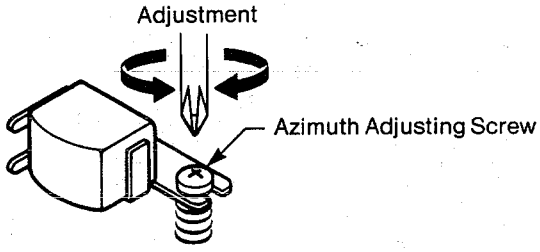
Then, set the dualtrace oscilloscope as follows:

‡ MODE ..... CHOP (chopped)
‡ SOURCE ..... INT (internal), CH1 or CH2
‡ SWEEP MODE ..... AUTO (automatic)

NOTE:
Adjust the field on the oscilloscope with the VOLT. ADJ. and TIME ADJ.



1. Insert a 10kHz test tape (Example: TEAC MTT-114) into the cassette compartment.
2. While playing back the test tape, turn the azimuth adjusting screw until the wave forms of the right and left channels are superimposed and set to optimum at maximum reading on the VTVM.



3. After the adjustment, secure the adjusting screw with paint or glue.

TUNER ADJUSTMENT

EQUIPMENT REQUIRED

- AM Standard Signal Generator
- FM Standard Signal Generator
- Generator Scope
- Loop Antenna for MW/LW
- Dummy Antenna (75Ω,unbalanced type) for FM
- Dummy Antenna (30Ω/10pF) for SW
- Ceramic Capacitor (10pF)
- Carbon Resistor (100kΩ, 330kΩ)
- VTVM
- DC Voltmeter (High Impedance)
- Oscilloscope
- Frequency Counter
- Dummy Load (3.2Ω)
- Alignment Tool
- Before performing the adjustment, set the Switches and controls as follows:
  - ‡ Function Switch ..... RADIO
  - ‡ Graphic Equalizer Controls ..... 0(click position)
  - ‡ Volume Controls ..... Arbitrary

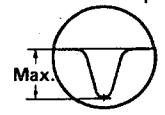
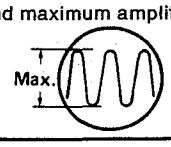
  NOTE:
  Use an alignment tool with plastic grip for all adjustments.

TUNER CONTROL IC REFERENCE OSCILLATION FREQUENCY ADJUSTMENT

1. Connect a frequency counter to Pin 28 (XO) of IC901 in the Control Tuner P.C.B. through a resistor 330kΩ.
2. Adjustment the **TC901** in the Control Tuner P.C.B until the oscillation frequency of IC901 becomes 75kHz±0.3Hz.

MW ALIGNMENT

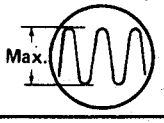
Standard Test Frequency 400Hz Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Frequency Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Connect the coil (5~6 turn) to the output of genescope and allow it to come near the bar antenna.	Connect input terminal of genescope to TP3 through capacitor (1μF).	460kHz	531kHz	T3	Obtain symmetrical curve and maximum amplitude. 
2	Calibration of Tuning Range	–	Connect DC voltmeter to TP4.	–	1,602kHz	T6	Reading on the DC voltmeter is 8.0V.
3	Adjustment of Tracking	Connect loop antenna to output of AM signal generator. Place loop antenna 60cm away from bar antenna	Connect VTVM with 3.2Ω dummy load and oscilloscope to Speakers terminal.	612kHz	612kHz	L4-1 (bar ant. coil)	Obtain sine-wave of 400Hz and maximum amplitude. 
4				1,404kHz	1,404kHz	TC2	

TUNER ADJUSTMENT (Continued)

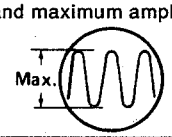
LW ALIGNMENT

Standard Test Frequency 400Hz Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Frequency Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	–	Connect DC voltmeter to TP4.	–	281kHz	T7	Reading on the DC voltmeter is 6.2V.
2	Adjustment of Tracking	Connect loop antenna to output of AM signal generator. Place loop antenna 60cm away from bar antenna	Connect VTVM with 3.2Ω dummy load and oscilloscope to Speakers terminal.	171kHz	171kHz	L4-2 (bar ant. coil)	Obtain sine-wave of 400Hz and maximum amplitude. 
3				262kHz	262kHz	TC3	

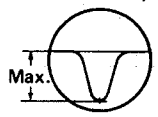
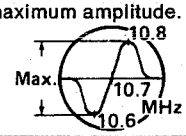
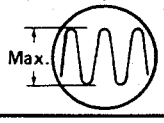
SW ALIGNMENT

Standard Test Frequency 400Hz Modulation 30% at AM

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Frequency Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	–	Connect DC voltmeter to TP4.	–	15.5MHz	T5	Reading on the DC voltmeter is 7.8V.
2	Adjustment of Tracking	Connect AM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (30Ω/10pF).	Connect VTVM with 3.2Ω dummy load and oscilloscope to speakers terminal.	6.5MHz	6.5MHz	T4	Obtain sine-wave of 400Hz and maximum amplitude. 
3				14.0MHz	14.0MHz	TC4	

FM ALIGNMENT

Standard Test Frequency 400Hz and Deviation 22.5kHz

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Frequency Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Connect output terminal of gene-scope to TP5 through capacitor (10pF).	Connect input terminal of gene-scope to TP6 through capacitor (1μF).	10.7MHz	87.5MHz	Turn T2 (blue core) fully counter-clockwise and then, adjust T1.	Obtain symmetrical curve and maximum amplitude. 
2						T2 (blue core)	Obtain S curve and maximum amplitude. 
3	Calibration of Tuning Range	–	Connect DC voltmeter to TP7.	–	108.0MHz	L2	Reading on the DC voltmeter is 6.5V.
4	Adjustment of Tracking	Connect FM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (75Ω, unbalanced type).	Connect VTVM with 3.2Ω dummy load and oscilloscope to Speakers terminal.	90MHz	90MHz	L1	Obtain sine-curve and maximum amplitude. 
5				106MHz	106MHz	TC1	

TUNER ADJUSTMENT (Continued)

FM/MW STATION DETECT SENSITIVITY ALIGNMENT

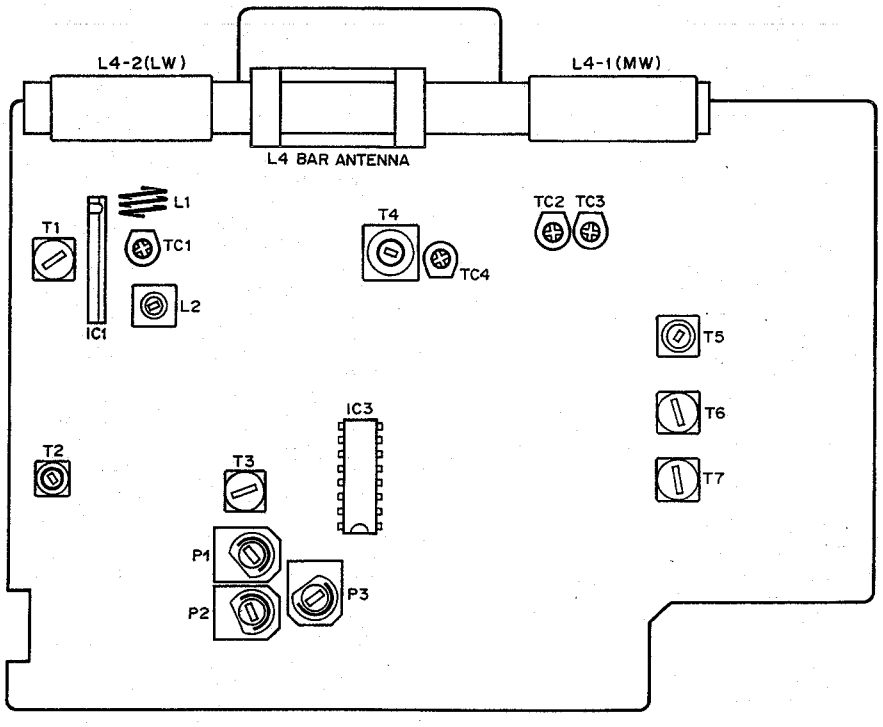
Step	Alignment	Connections		Frequency of Signal Generator	Tuning Frequency Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	FM	Connect FM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (75Ω, unbalanced type).	Connect a DC voltmeter into both sides of the resistor R14.	90MHz (ANT.input 60dBμ)	90MHz	T2	Reading on the DC voltmeter is less than ±50mV.
2			Connect DC voltmeter to TP8.	90MHz (ANT.input 20dBμ)	90MHz	P2	Reading on the DC voltmeter should meet at the point of "LOW" level changed from the "HIGH" level.
3	MW	Connect loop antenna to output of AM signal gnnerator Place loop antenna 60 cm away from bar antenna.	Connect DC voltmeter to TP8.	603kHz (ANT.input 52dBμ)	603kHz	P1	Reading on the DC voltmeter should meet at the point of "LOW" level changed form the "HIGH" level

NOTE:
In the first instance, perform the adjustment for FM

FM MPX (Multiplex) ADJUSTMENT

1. Before the adjustment, set the switches as follows:
   - Function Switch ..... RADIO
   - FM Mode Switch ..... STEREO
   - Band Switch ..... FM
2. Connect a frequency counter to Pin 12 of IC3 (**TP9**) through a resistor 100kΩ.
3. Adjust the potentiometer (**P3**) until the oscillation frequency of IC3 becomes 19kHz (±20Hz).

TUNER P.C.BOARD ALIGNMENT POINTS
(TOP VIEW)



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
AMPLIFIER P.C.B. ASSY			
51	620 185 3599	Amplifier P.C.B. Assy	1
	620 120 6579	Radiator IC	1
	411 023 9800	SCR S-TPG PAN 3X8	2
W311	620 024 3353	Flat Wire 3	1
W312	620 024 3360	Flat Wire 4	1
W313	620 024 3377	Flat Wire 4	1
W314	620 024 3384	Flat Wire 7	1
CN1	620 021 6180	Connector 3P	1
CN2	620 021 6180	Connector 3P	1
CN3	620 021 6869	Connector 2P	1
CN4	620 021 6869	Connector 2P	1
CN5	620 021 6197	Connector 4P	1
CN6	620 021 6210	Connector 6P	1
J301	620 018 0443	Jack 7P (Headphone)	1
J302	620 022 4987	6P Push Terminal (Front SP)	1
J303	620 017 2806	Pin Jack 2P (Rear SP)	1
J304	620 017 2806	Pin Jack 2P (Line In)	1
J305	620 017 2493	Jack 3P (Mic)	1
L101	620 027 0595	AF Coil	1
L102	620 027 0595	AF Coil	1
L103	620 027 1691	Coil 33mH Shield	1
L104	620 027 1691	Coil 33mH Shield	1
L301	620 026 5386	Choke Coil 100μH	1
PN1	620 021 6821	Pin 1P	1
PN2	620 021 6821	Pin 1P	1
S301	620 015 3829	Push Switch 1 Key (POWER)	1
S302	620 015 3805	Push Switch 1 Key (SURROUND)	1
S303	620 015 3812	Push Switch 1 Key (F/R)	1
S304	620 016 7277	Lever Switch 4-3 (FUNCTION)	1
S305	620 016 7970	Slide Switch 9-2 (R/P)	1
S306	620 016 4122	Slide Switch (OSC)	1
S307	620 016 8335	Push Switch 1 Key (TAPE 1)	1
S308	620 015 3065	Push Switch 1 Key (TAPE 2)	1
T301	620 028 8545	OSC Trans	1
IC301	409 121 8702	IC LA3246	1
IC302	409 017 9400	IC LA4505	1
IC303	409 115 6806	IC BA3312N	1
Q101	406 001 7206	TR 2SC1740-LNT-93R	1
Q102	406 001 7206	TR 2SC1740-LNT-93R	1
Q103	406 001 7206	TR 2SC1740-LNT-93R	1
Q104	406 001 7206	TR 2SC1740-LNT-93R	1
Q105	406 001 7206	TR 2SC1740-LNT-93R	1
Q106	406 001 7206	TR 2SC1740-LNT-93R	1
Q109	406 001 7206	TR 2SC1740-LNT-93R	1
Q110	406 001 7206	TR 2SC1740-LNT-93R	1
Q111	406 001 7206	TR 2SC1740-LNT-93R	1
Q112	406 001 7206	TR 2SC1740-LNT-93R	1
Q113	406 001 7206	TR 2SC1740-LNT-93R	1
Q114	406 001 7206	TR 2SC1740-LNT-93R	1
Q301	405 023 5306	TR 2SD400-F-MP	1
Q302	405 019 2708	TR 2SC536-F-NP-AA	1
Q303	405 019 2708	TR 2SC536-F-NP-AA	1
Q304	405 019 2708	TR 2SC536-F-NP-AA	1
Q305	406 001 7206	TR 2SC1740-LNT-93R	1
Q306	405 021 0204	TR 2SD1012-F-SPA-AC	1
Q307	405 018 0200	TR 2SC3331-U	1
Q308	405 019 2708	TR 2SC536-F-NP-AA	1
Q309	405 019 2708	TR 2SC536-F-NP-AA	1
Q310	405 043 4709	TR 2SB1166-R	1
or	405 043 4808	TR 2SB1166-S	1
Q311	405 019 2708	TR 2SC536-F-NP-AA	1
Q312	405 019 2708	TR 2SC536-F-NP-AA	1
Q313	405 004 4502	TR 2SA608-F-NP-AA	1
D301	407 005 3805	DIODE DS442-BT	1
D302	407 007 9904	DIODE GMA01-BT	1
D303	407 007 9904	DIODE GMA01-BT	1
D304	407 007 9904	DIODE GMA01-BT	1
D305	407 007 9904	DIODE GMA01-BT	1
D306	407 007 9904	DIODE GMA01-BT	1
D307	407 007 9904	DIODE GMA01-BT	1
D308	407 007 9904	DIODE GMA01-BT	1
D309	407 007 9904	DIODE GMA01-BT	1
D310	407 063 9603	ZENER DIODE MTZJ9.1A	1
D311	407 007 9904	DIODE GMA01-BT	1
D312	407 007 9904	DIODE GMA01-BT	1
D313	407 007 9904	DIODE GMA01-BT	1
D314	407 007 9904	DIODE GMA01-BT	1
D315	407 007 9904	DIODE GMA01-BT	1
D316	407 007 9904	DIODE GMA01-BT	1
D317	407 007 9904	DIODE GMA01-BT	1
D318	407 007 9904	DIODE GMA01-BT	1
C101	403 073 6502	CERAMIC 470P K 50V	1
C102	403 073 6502	CERAMIC 470P K 50V	1
C103	403 073 6502	CERAMIC 470P K 50V	1
C104	403 073 6502	CERAMIC 470P K 50V	1
C105	403 041 3304	ELECT 47U M 10V	1
C106	403 041 3304	ELECT 47U M 10V	1
C107	403 057 0908	POLYESTER 0.01U K 50V	1
C108	403 057 0908	POLYESTER 0.01U K 50V	1
C109	403 042 0302	ELECT 10U M 16V	1
C110	403 042 0302	ELECT 10U M 16V	1
C111	403 075 4308	CERAMIC 820P K 50V	1
C112	403 075 4308	CERAMIC 820P K 50V	1
C113	403 075 0508	CERAMIC 6800P K 50V	1
C114	403 075 0508	CERAMIC 6800P K 50V	1
C115	403 047 9607	ELECT 0.1U M 50V	1
C116	403 047 9607	ELECT 0.1U M 50V	1
C117	403 049 1609	ELECT 1U M 50V	1
C118	403 049 1609	ELECT 1U M 50V	1
C119	403 042 0302	ELECT 10U M 16V	1
C120	403 042 0302	ELECT 10U M 16V	1
C121	403 049 1609	ELECT 1U M 50V	1
C122	403 049 1609	ELECT 1U M 50V	1
C125	403 069 0705	CERAMIC 1000P K 50V	1
C126	403 069 0705	CERAMIC 1000P K 50V	1
C127	403 039 7901	ELECT 100U M 10V	1
C128	403 039 7901	ELECT 100U M 10V	1
C129	403 025 7304	CERAMIC 4.7P K 50V	1
C130	403 025 7304	CERAMIC 4.7P K 50V	1
C131	403 069 8404	CERAMIC 0.01U Z 50V	1
C132	403 069 8404	CERAMIC 0.01U Z 50V	1
C133	403 039 7901	ELECT 100U M 10V	1
C134	403 039 7901	ELECT 100U M 10V	1
C135	403 042 6205	ELECT 1000U M 16V	1
C136	403 042 6205	ELECT 1000U M 16V	1
C137	403 058 5803	POLYESTER 0.15U K 50V	1
C138	403 058 5803	POLYESTER 0.15U K 50V	1
C139	403 047 9607	ELECT 0.1U M 50V	1
C140	403 047 9607	ELECT 0.1U M 50V	1
C141	403 073 6502	CERAMIC 470P K 50V	1
C142	403 073 6502	CERAMIC 470P K 50V	1
C143	403 041 3304	ELECT 47U M 10V	1
C144	403 041 3304	ELECT 47U M 10V	1
C145	403 003 4806	CERAMIC 0.027U K 25V	1
C146	403 003 4806	CERAMIC 0.027U K 25V	1
C147	403 002 8508	CERAMIC 0.015U K 25V	1
C148	403 002 8508	CERAMIC 0.015U K 25V	1
C149	403 042 0302	ELECT 10U M 16V	1
C150	403 042 0302	ELECT 10U M 16V	1
C151	403 074 9007	CERAMIC 680P K 50V	1
C152	403 074 9007	CERAMIC 680P K 50V	1
C153	403 068 9105	CERAMIC 100P K 50V	1
C154	403 068 9105	CERAMIC 100P K 50V	1
C155	403 071 5903	CERAMIC 220P K 50V	1
C156	403 071 5903	CERAMIC 220P K 50V	1
C157	403 147 0801	NP-ELECT 4.7U M 25V	1
C158	403 147 0801	NP-ELECT 4.7U M 25V	1
C159	403 068 9105	CERAMIC 100P K 50V	1
C160	403 068 9105	CERAMIC 100P K 50V	1
C161	403 068 9105	CERAMIC 100P K 50V	1
C162	403 068 9105	CERAMIC 100P K 50V	1
C163	403 070 4709	CERAMIC 1200P K 50V	1
C164	403 070 4709	CERAMIC 1200P K 50V	1
C165	403 057 0908	POLYESTER 0.01U K 50V	1
C166	403 057 0908	POLYESTER 0.01U K 50V	1
C301	403 047 1502	ELECT 4.7U M 25V	1
C302	403 047 1502	ELECT 4.7U M 25V	1
C303	403 047 1502	ELECT 4.7U M 25V	1
C304	403 039 7901	ELECT 100U M 10V	1
C305	403 039 7901	ELECT 100U M 10V	1
C306	403 040 4807	ELECT 220U M 10V	1
C307	403 039 7901	ELECT 100U M 10V	1
C308	403 043 1100	ELECT 220U M 16V	1
C309	403 097 6403	ELECT 3300U M 25V	1
C310	403 049 1609	ELECT 1U M 50V	1
C311	403 039 7901	ELECT 100U M 10V	1
C312	403 040 2704	ELECT 22U M 10V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C313	403 043 1100	ELECT	220U	M	16V	1
C314	403 040 4807	ELECT	220U	M	10V	1
C315	403 040 4807	ELECT	220U	M	10V	1
C316	403 039 7901	ELECT	100U	M	10V	1
C317	403 042 0302	ELECT	10U	M	16V	1
C318	403 040 2704	ELECT	22U	M	10V	1
C319	403 071 7501	CERAMIC	2200P	K	50V	1
C320	403 047 9607	ELECT	0.1U	M	50V	1
C321	403 049 1609	ELECT	1U	M	50V	1
C322	403 039 7901	ELECT	100U	M	10V	1
C323	403 049 1609	ELECT	1U	M	50V	1
C324	403 002 1905	CERAMIC	0.01U	K	25V	1
C325	403 002 1905	CERAMIC	0.01U	K	25V	1
C326	403 081 2602	POLYPRO	2200P	J	100V	1
C328	403 069 0705	CERAMIC	1000P	K	50V	1
C329	403 072 9603	CERAMIC	3300P	K	50V	1
C330	403 040 2704	ELECT	22U	M	10V	1
C331	403 068 9105	CERAMIC	100P	K	50V	1
C332	403 072 2703	CERAMIC	0.022U	Z	50V	1
C333	403 072 2703	CERAMIC	0.022U	Z	50V	1
C334	403 072 2703	CERAMIC	0.022U	Z	50V	1
C335	403 072 2703	CERAMIC	0.022U	Z	50V	1
C336	403 049 1609	ELECT	1U	M	50V	1
R101	401 029 4503	CARBON	180	JA	1/8W	1
R102	401 029 4503	CARBON	180	JA	1/8W	1
R103	401 028 7604	CARBON	12K	JA	1/8W	1
R104	401 028 7604	CARBON	12K	JA	1/8W	1
R105	401 028 7604	CARBON	12K	JA	1/8W	1
R106	401 028 7604	CARBON	12K	JA	1/8W	1
R107	401 028 3705	CARBON	10K	JA	1/8W	1
R108	401 028 3705	CARBON	10K	JA	1/8W	1
R109	401 031 2405	CARBON	3.9K	JA	1/8W	1
R110	401 031 2405	CARBON	3.9K	JA	1/8W	1
R111	401 032 8703	CARBON	8.2K	JA	1/8W	1
R112	401 032 8703	CARBON	8.2K	JA	1/8W	1
R113	401 032 1100	CARBON	56K	JA	1/8W	1
R114	401 032 1100	CARBON	56K	JA	1/8W	1
R115	401 028 3200	CARBON	1K	JA	1/8W	1
R116	401 028 3200	CARBON	1K	JA	1/8W	1
R117	401 030 9207	CARBON	3.3K	JA	1/8W	1
R118	401 030 9207	CARBON	3.3K	JA	1/8W	1
R119	401 031 6601	CARBON	4.7K	JA	1/8W	1
R120	401 031 6601	CARBON	4.7K	JA	1/8W	1
R121	401 031 6601	CARBON	4.7K	JA	1/8W	1
R122	401 031 6601	CARBON	4.7K	JA	1/8W	1
R123	401 028 7109	CARBON	1.2K	JA	1/8W	1
R124	401 028 7109	CARBON	1.2K	JA	1/8W	1
R125	401 032 4002	CARBON	680	JA	1/8W	1
R126	401 032 4002	CARBON	680	JA	1/8W	1
R127	401 028 3200	CARBON	1K	JA	1/8W	1
R128	401 028 3200	CARBON	1K	JA	1/8W	1
R129	401 028 3200	CARBON	1K	JA	1/8W	1
R130	401 028 3200	CARBON	1K	JA	1/8W	1
R131	401 028 3200	CARBON	1K	JA	1/8W	1
R132	401 028 3200	CARBON	1K	JA	1/8W	1
R133	401 031 0203	CARBON	330K	JA	1/8W	1
R134	401 031 0203	CARBON	330K	JA	1/8W	1
R135	401 028 2104	CARBON	10	JA	1/8W	1
R136	401 028 2104	CARBON	10	JA	1/8W	1
R139	401 028 2609	CARBON	100	JA	1/8W	1
R140	401 028 2609	CARBON	100	JA	1/8W	1
R141	401 030 0709	CARBON	22K	JA	1/8W	1
R142	401 030 0709	CARBON	22K	JA	1/8W	1
R143	401 016 3809	CARBON	2.2K	JA	1/4W	1
R144	401 016 3809	CARBON	2.2K	JA	1/4W	1
R145	401 022 0809	CARBON	68	JA	1/4W	1
R146	401 022 0809	CARBON	68	JA	1/4W	1
R147	401 029 1502	CARBON	15K	JA	1/8W	1
R148	401 029 1502	CARBON	15K	JA	1/8W	1
R149	401 022 3107	CARBON	6.8K	JA	1/4W	1
R150	401 022 3107	CARBON	6.8K	JA	1/4W	1
R151	401 028 3705	CARBON	10K	JA	1/8W	1
R152	401 028 3705	CARBON	10K	JA	1/8W	1
R153	401 028 7109	CARBON	1.2K	JA	1/8W	1
R154	401 028 7109	CARBON	1.2K	JA	1/8W	1
R155	401 032 9205	CARBON	82K	JA	1/8W	1
R156	401 032 9205	CARBON	82K	JA	1/8W	1
R157	401 028 3705	CARBON	10K	JA	1/8W	1
R158	401 028 3705	CARBON	10K	JA	1/8W	1

Ref. No.	Part No.	Description				Q'ty
R159	401 031 6106	CARBON	470	JA	1/8W	1
R160	401 031 6106	CARBON	470	JA	1/8W	1
R161	401 028 2609	CARBON	100	JA	1/8W	1
R162	401 028 2609	CARBON	100	JA	1/8W	1
R163	401 028 2609	CARBON	100	JA	1/8W	1
R164	401 028 2609	CARBON	100	JA	1/8W	1
R165	401 028 3705	CARBON	10K	JA	1/8W	1
R166	401 028 3705	CARBON	10K	JA	1/8W	1
R167	401 028 3705	CARBON	10K	JA	1/8W	1
R168	401 028 3705	CARBON	10K	JA	1/8W	1
R169	401 029 1502	CARBON	15K	JA	1/8W	1
R170	401 029 1502	CARBON	15K	JA	1/8W	1
R171	401 032 5108	CARBON	68K	JA	1/8W	1
R172	401 032 5108	CARBON	68K	JA	1/8W	1
R173	401 030 0204	CARBON	2.2K	JA	1/8W	1
R174	401 030 0204	CARBON	2.2K	JA	1/8W	1
R175	401 028 3705	CARBON	10K	JA	1/8W	1
R176	401 028 3705	CARBON	10K	JA	1/8W	1
R177	401 028 5808	CARBON	11K	JA	1/8W	1
R178	401 028 5808	CARBON	11K	JA	1/8W	1
R179	401 031 2405	CARBON	3.9K	JA	1/8W	1
R180	401 031 2405	CARBON	3.9K	JA	1/8W	1
R181	401 030 0709	CARBON	22K	JA	1/8W	1
R182	401 030 0709	CARBON	22K	JA	1/8W	1
R301	401 028 4207	CARBON	100K	JA	1/8W	1
R302	401 031 7202	CARBON	47K	JA	1/8W	1
R303	401 031 7202	CARBON	47K	JA	1/8W	1
R304	401 028 4207	CARBON	100K	JA	1/8W	1
R305	401 012 8105	CARBON	100K	JA	1/4W	1
R306	401 012 8105	CARBON	100K	JA	1/4W	1
R307	401 016 2604	CARBON	220	JA	1/4W	1
R308	401 028 2609	CARBON	100	JA	1/8W	1
R309	401 029 9706	CARBON	220	JA	1/8W	1
R310	401 030 9207	CARBON	3.3K	JA	1/8W	1
R311	401 030 8705	CARBON	330	JA	1/8W	1
R312	401 028 4207	CARBON	100K	JA	1/8W	1
R313	401 030 0709	CARBON	22K	JA	1/8W	1
R314	401 028 3200	CARBON	1K	JA	1/8W	1
R315	401 032 0103	CARBON	560	JA	1/8W	1
R316	401 032 6501	CARBON	750	JA	1/8W	1
R317	401 029 4503	CARBON	180	JA	1/8W	1
R318	401 030 9207	CARBON	3.3K	JA	1/8W	1
R319	401 028 3200	CARBON	1K	JA	1/8W	1
R320	401 016 4806	CARBON	22K	JA	1/4W	1
R321	401 016 4806	CARBON	22K	JA	1/4W	1
R322	401 012 7009	CARBON	10K	JA	1/4W	1
R323	401 030 0709	CARBON	22K	JA	1/8W	1
R324	401 029 9706	CARBON	220	JA	1/8W	1
R325	401 031 0609	CARBON	3.3M	JA	1/8W	1
R326	401 012 8105	CARBON	100K	JA	1/4W	1
R327	401 031 6601	CARBON	4.7K	JA	1/8W	1
R328	401 031 3204	CARBON	390K	JA	1/8W	1
R329	401 030 0204	CARBON	2.2K	JA	1/8W	1
R330	401 029 9706	CARBON	220	JA	1/8W	1
R331	401 016 2604	CARBON	220	JA	1/4W	1
R332	401 030 0709	CARBON	22K	JA	1/8W	1
R333	401 023 0709	CARBON	82	JA	1/4W	1
R334	401 021 0701	CARBON	56	JA	1/4W	1
R335	401 031 5505	CARBON	47	JA	1/8W	1
R336	401 030 0204	CARBON	2.2K	JA	1/8W	1
R337	401 016 4806	CARBON	22K	JA	1/4W	1
R338	401 030 1300	CARBON	220K	JA	1/8W	1
R339	401 029 7306	CARBON	2.7	JA	1/8W	1
R340	401 031 2801	CARBON	39K	JA	1/8W	1
R341	401 030 4707	CARBON	27K	JA	1/8W	1
R342	401 030 0709	CARBON	22K	JA	1/8W	1
R343	401 018 3807	CARBON	3.3K	JA	1/4W	1
R344	401 060 3701	OXIDE-MT	220	JB	1W	1
R345	401 028 3705	CARBON	10K	JA	1/8W	1
R346	401 028 4207	CARBON	100K	JA	1/8W	1
R347	401 028 3705	CARBON	10K	JA	1/8W	1
R348	401 028 3705	CARBON	10K	JA	1/8W	1
R349	401 028 4207	CARBON	100K	JA	1/8W	1
R350	401 028 4207	CARBON	100K	JA	1/8W	1
R351	401 028 4207	CARBON	100K	JA	1/8W	1
R352	401 028 4207	CARBON	100K	JA	1/8W	1

GRAPHIC EQ. P.C.B. ASSY

52	620 080 6565	Graphic EQ. P.C.B. Assy	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
L401	620 026 8462	Choke Coil 47mH	1
L402	620 026 8462	Choke Coil 47mH	1
VR401	620 006 3753	Slide VR 50KBX1 (VOLUME L)	1
VR402	620 006 3753	Slide VR 50KBX1 (VOLUME R)	1
VR451	620 006 3760	Slide VR 50KWX2 (100Hz)	1
VR452	620 006 3760	Slide VR 50KWX2 (330Hz)	1
VR453	620 006 3760	Slide VR 50KWX2 (1kHz)	1
VR454	620 006 3760	Slide VR 50KWX2 (3.3kHz)	1
VR455	620 006 3760	Slide VR 50KWX2 (10kHz)	1
IC451	409 068 2009	IC BA3824LS	1
C401	403 069 0705	CERAMIC 1000P K 50V	1
C402	403 069 0705	CERAMIC 1000P K 50V	1
C403	403 047 1502	ELECT 4.7U M 25V	1
C404	403 047 1502	ELECT 4.7U M 25V	1
C405	403 047 1502	ELECT 4.7U M 25V	1
C406	403 047 1502	ELECT 4.7U M 25V	1
C407	403 048 7602	ELECT 0.47U M 50V	1
C408	403 048 7602	ELECT 0.47U M 50V	1
C409	403 005 0806	CERAMIC 0.033U K 50V	1
C410	403 005 0806	CERAMIC 0.033U K 50V	1
C411	403 048 3109	ELECT 0.22U M 50V	1
C412	403 048 3109	ELECT 0.22U M 50V	1
C413	403 075 0508	CERAMIC 6800P K 50V	1
C414	403 075 0508	CERAMIC 6800P K 50V	1
C415	403 004 4607	CERAMIC 0.068U K 25V	1
C416	403 004 4607	CERAMIC 0.068U K 25V	1
C417	403 071 7501	CERAMIC 2200P K 50V	1
C418	403 071 7501	CERAMIC 2200P K 50V	1
C419	403 004 9800	CERAMIC 0.022U K 50V	1
C420	403 004 9800	CERAMIC 0.022U K 50V	1
C421	403 074 9007	CERAMIC 680P K 50V	1
C422	403 074 9007	CERAMIC 680P K 50V	1
C423	403 074 7409	CERAMIC 5600P K 50V	1
C424	403 074 7409	CERAMIC 5600P K 50V	1
C425	403 071 7501	CERAMIC 2200P K 50V	1
C426	403 071 7501	CERAMIC 2200P K 50V	1
C427	403 004 4607	CERAMIC 0.068U K 25V	1
C428	403 004 4607	CERAMIC 0.068U K 25V	1
C451	403 039 7901	ELECT 100U M 10V	1
R401	401 029 5005	CARBON 1.8K JA 1/8W	1
R402	401 029 5005	CARBON 1.8K JA 1/8W	1
R403	401 031 6106	CARBON 470 JA 1/8W	1
R404	401 031 6106	CARBON 470 JA 1/8W	1
R405	401 030 0204	CARBON 2.2K JA 1/8W	1
R406	401 030 0204	CARBON 2.2K JA 1/8W	1
BATTERY P.C.B. ASSY			
53	620 080 6596	Battery P.C.B. Assy	1
CONTROL TUNER P.C.B. ASSY			
54	620 183 4130	Control Tuner P.C.B. Assy	1
	620 051 9069	Spacer (LED)	4
	620 105 1797	Reflect LCD	1
	620 122 3057	Cover LCD	1
W901	620 185 1878	Connector 8P Assy	1
W902	620 182 8344	Connector 6P Assy	1
W903	620 182 7910	Connector 7P Assy	1
W904	620 185 1885	Connector 4P Assy	1
W905	620 182 9174	Wire Ring Terminal	1
LC901	620 183 0361	LCD, 8010JP	1
SW901	620 015 1917	Keyboard Switch 6 mm	1
SW902	620 015 1917	Keyboard Switch 6 mm	1
SW903	620 015 1917	Keyboard Switch 6 mm	1
SW904	620 015 1917	Keyboard Switch 6 mm	1
SW905	620 015 1917	Keyboard Switch 6 mm	1
SW906	620 015 1917	Keyboard Switch 6 mm	1
SW907	620 015 1917	Keyboard Switch 6 mm	1
SW908	620 015 1917	Keyboard Switch 6 mm	1
SW909	620 015 1917	Keyboard Switch 6 mm	1
SW910	620 015 1917	Keyboard Switch 6 mm	1
TC901	620 007 0102	Trimmer Condenser	1
X901	620 007 3295	Crystal 75kHz	1
IC901	409 146 5304	IC UPD1715G-111	1
Q901	405 012 8608	TR 2SC2021-S	1
Q902	405 012 8608	TR 2SC2021-S	1
Q903	405 012 8608	TR 2SC2021-S	1
Q904	405 012 8608	TR 2SC2021-S	1
D901	407 061 2200	DIODE 1SS254-TA	1
D902	407 061 2200	DIODE 1SS254-TA	1

Ref. No.	Part No.	Description	Q'ty
D903	407 061 2200	DIODE 1SS254-TA	1
D904	407 061 2200	DIODE 1SS254-TA	1
D905	407 061 2200	DIODE 1SS254-TA	1
D906	407 061 2200	DIODE 1SS254-TA	1
D907	407 061 2200	DIODE 1SS254-TA	1
D908	407 005 4109	DIODE DS442H	1
D909	407 062 7303	LED SEL2413E	1
D910	407 062 7303	LED SEL2413E	1
D911	407 062 9307	LED SLB-55VR3	1
D912	407 062 9307	LED SLB-55VR3	1
C902	403 022 7703	CERAMIC 33P J 50V	1
C903	403 001 2309	CERAMIC 0.01U N 16V	1
C904	403 001 2309	CERAMIC 0.01U N 16V	1
C905	403 001 2309	CERAMIC 0.01U N 16V	1
C906	403 050 1605	ELECT 2.2U M 50V	1
C907	404 029 1503	CERAMIC 0.047U Z 50V	1
C908	403 054 0109	ELECT 4.7U M 35V	1
C909	404 029 1503	CERAMIC 0.047U Z 50V	1
C910	403 001 2309	CERAMIC 0.01U N 16V	1
C911	403 009 1809	CERAMIC 10P J 50V	1
C912	404 029 1503	CERAMIC 0.047U Z 50V	1
C913	403 040 2704	ELECT 22U M 10V	1
C914	403 001 2309	CERAMIC 0.01U N 16V	1
C915	403 068 9402	CERAMIC 100P K 50V	1
R901	401 030 4202	CARBON 2.7K JA 1/8W	1
R902	401 030 9207	CARBON 3.3K JA 1/8W	1
R903	401 028 2609	CARBON 100 JA 1/8W	1
R904	401 030 9207	CARBON 3.3K JA 1/8W	1
R905	401 030 9207	CARBON 3.3K JA 1/8W	1
R906	401 030 4202	CARBON 2.7K JA 1/8W	1
R907	401 030 0204	CARBON 2.2K JA 1/8W	1
R908	401 030 0204	CARBON 2.2K JA 1/8W	1
R909	401 028 2609	CARBON 100 JA 1/8W	1
R910	401 028 3705	CARBON 10K JA 1/8W	1
R911	401 030 8705	CARBON 330 JA 1/8W	1
R912	401 030 9702	CARBON 33K JA 1/8W	1
R913	401 028 2609	CARBON 100 JA 1/8W	1
or	401 030 8705	CARBON 330 JA 1/8W	1
RADIO TUNER P.C.B. ASSY			
55	620 183 4154	Radio Tuner P.C.B. Assy	1
	620 118 2842	Shield Plate	1
	620 125 8424	Wire Band	3
CN1	620 021 6210	Connector 6P	1
CN2	620 021 8153	Plug 7P	1
CN3	620 021 8146	Plug 8P	1
W3	620 182 8269	Connector 6P Assy	1
BPF1	620 026 7397	Band Pass Filter	1
CF1	620 026 7113	Ceramic Filter	1
CF2	620 026 6727	Mech Filter D460BL	1
CF3	620 026 9407	Ceramic Filter 460K	1
CF4	620 026 7113	Ceramic Filter	1
L1	620 029 0852	RF Coil	1
L2	620 028 7043	FM OSC Trans	1
L3	620 026 5003	Choke Coil 1mH	1
L4	620 028 2758	Bar Antenna	1
L5	620 026 9414	Choke Coil 6.8μH	1
L6	620 029 4454	Choke Coil Ring	1
P1	620 005 6298	Potentiometer (B-30kΩ)	1
P2	620 005 6298	Potentiometer (B-30kΩ)	1
P3	620 005 6274	Potentiometer (B-10kΩ)	1
SW1	620 016 6867	Lever Switch (Band)	1
SW2	620 016 8335	Push Switch (FM Mode)	1
T1	620 027 6429	IFT FM	1
T2	620 027 7297	IFT FM	1
T3	620 027 5804	IFT AM	1
T4	620 027 9574	ANT Coil SW	1
T5	620 028 6336	OSC Trans SW	1
T6	620 028 6282	OSC Trans MW	1
T7	620 028 6206	OSC Trans LW	1
TC1	620 006 9717	Trimmer Condenser	1
TC2	620 006 9717	Trimmer Condenser	1
TC3	620 006 9748	Trimmer Condenser	1
TC4	620 006 9717	Trimmer Condenser	1
TP1	620 021 6807	Pin 1P	1
TP2	620 021 6807	Pin 1P	1
IC1	409 068 3006	IC BA4412	1
IC2	409 016 2105	IC LA1265	1
IC3	409 002 1600	IC BA1355	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
Q1	405 026 8304	TR 2SK212-E	1
Q2	405 021 0600	TR 2SD1012-G-SPA	1
Q3	405 004 4502	TR 2SA608-F-NP	1
Q4	405 027 5708	TR 2SK427-S	1
Q5	405 021 0600	TR 2SD1012-G-SPA	1
D1	407 065 0509	VARACTOR DI KV1330A	1

NOTE:
The **D1** consists of 1/2 D1 and 1/2 D1 which have the equivalent characteristics. When replacing, obtain a new pair of D1 (1/2 D1 and 1/2 D1) together.

D2	407 061 6307	DIODE KV1260	1
D3	407 061 2309	DIODE 1SS95	1
D4	407 061 2309	DIODE 1SS95	1
D5	407 061 2309	DIODE 1SS95	1
D6	407 061 2309	DIODE 1SS95	1
D7	407 061 2309	DIODE 1SS95	1
D8	407 061 2309	DIODE 1SS95	1
D10	407 065 1308	ZENER DIODE MTZJ3.6B	1
D14	407 005 4109	DIODE DS442H	1
C1	403 027 8002	CERAMIC 5.6P K 50V	1
C2	403 069 1207	CERAMIC 1000P K 50V	1
C3	403 009 1809	CERAMIC 10P J 50V	1
C4	403 001 2309	CERAMIC 0.01U N 16V	1
C5	403 069 1207	CERAMIC 1000P K 50V	1
C6	403 001 2309	CERAMIC 0.01U N 16V	1
C7	403 001 2309	CERAMIC 0.01U N 16V	1
C8	403 069 1207	CERAMIC 1000P K 50V	1
C9	403 012 6006	CERAMIC 15P J 50V	1
C10	403 012 6006	CERAMIC 15P J 50V	1
C11	403 027 8002	CERAMIC 5.6P K 50V	1
C12	403 069 1207	CERAMIC 1000P K 50V	1
C13	403 069 1207	CERAMIC 1000P K 50V	1
C14	403 039 7802	ELECT 100U M 10V	1
C15	403 001 2309	CERAMIC 0.01U N 16V	1
C16	403 001 2309	CERAMIC 0.01U N 16V	1
C17	403 001 2309	CERAMIC 0.01U N 16V	1
C18	403 050 7706	ELECT 3.3U M 50V	1
C19	403 051 2007	ELECT 4.7U M 50V	1
C20	403 050 7706	ELECT 3.3U M 50V	1
C21	403 042 0302	ELECT 10U M 16V	1
C22	403 001 2309	CERAMIC 0.01U N 16V	1
C24	403 042 0302	ELECT 10U M 16V	1
C25	403 042 0302	ELECT 10U M 16V	1
C26	403 001 2309	CERAMIC 0.01U N 16V	1
C27	403 049 1609	ELECT 1U M 50V	1
C29	403 082 0706	POLYPRO 470P J 100V	1
C30	403 048 3109	ELECT 0.22U M 50V	1
C31	403 048 7602	ELECT 0.47U M 50V	1
C32	403 049 1609	ELECT 1U M 50V	1
C33	403 001 2309	CERAMIC 0.01U N 16V	1
C34	403 001 2309	CERAMIC 0.01U N 16V	1
C35	403 001 2309	CERAMIC 0.01U N 16V	1
C36	403 001 2309	CERAMIC 0.01U N 16V	1
C37	403 047 9607	ELECT 0.1U M 50V	1
C38	403 047 9607	ELECT 0.1U M 50V	1
C39	403 041 5605	ELECT 470U M 10V	1
C41	403 040 2704	ELECT 22U M 10V	1
C42	403 039 7802	ELECT 100U M 10V	1
C43	403 042 0302	ELECT 10U M 16V	1
C44	403 001 2309	CERAMIC 0.01U N 16V	1
C46	403 001 2309	CERAMIC 0.01U N 16V	1
C47	403 009 1809	CERAMIC 10P J 50V	1
C49	403 028 3402	CERAMIC 56P J 50V	1
C50	403 081 9403	POLYPRO 3900P J 100V	1
C51	403 111 7508	POLYPRO 430P J 100V	1
C52	403 081 4200	POLYPRO 260P J 100V	1
C53	403 009 1809	CERAMIC 10P J 50V	1
C54	403 010 7807	CERAMIC 12P J 50V	1
C55	403 014 7902	CERAMIC 180P J 50V	1
C56	403 001 2309	CERAMIC 0.01U N 16V	1
C57	403 069 1207	CERAMIC 1000P K 50V	1
C58	403 001 5805	CERAMIC 0.022U N 16V	1
C59	403 033 2605	CERAMIC 8.2P K 50V	1
C60	403 069 1207	CERAMIC 1000P K 50V	1
C61	403 073 7004	CERAMIC 470P K 50V	1
C62	403 001 2309	CERAMIC 0.01U N 16V	1
C63	403 039 7802	ELECT 100U M 10V	1
C64	403 042 0302	ELECT 10U M 16V	1
C65	403 068 9402	CERAMIC 100P K 50V	1
C66	403 016 2004	CERAMIC 2.2P K 50V	1
C68	403 001 2309	CERAMIC 0.01U N 16V	1
C69	403 001 2309	CERAMIC 0.01U N 16V	1
C70	403 022 7703	CERAMIC 33P J 50V	1
R1	401 028 3200	CARBON 1K JA 1/8W	1
R2	401 028 4207	CARBON 100K JA 1/8W	1
R3	401 028 4207	CARBON 100K JA 1/8W	1
R4	401 028 2104	CARBON 10 JA 1/8W	1
R5	401 029 7603	CARBON 20 JA 1/8W	1
R6	401 030 9702	CARBON 33K JA 1/8W	1
R7	401 031 7202	CARBON 47K JA 1/8W	1
R8	401 028 4702	CARBON 1M JA 1/8W	1
R9	401 014 2903	CARBON 150 JA 1/4W	1
R10	401 012 4503	CARBON 100 JA 1/4W	1
R11	401 032 0608	CARBON 5.6K JA 1/8W	1
R12	401 032 5108	CARBON 68K JA 1/8W	1
R13	401 012 7009	CARBON 10K JA 1/4W	1
R14	401 015 3800	CARBON 18K JA 1/4W	1
R15	401 012 7009	CARBON 10K JA 1/4W	1
R16	401 028 3705	CARBON 10K JA 1/8W	1
R17	401 031 6601	CARBON 4.7K JA 1/8W	1
R18	401 032 5108	CARBON 68K JA 1/8W	1
R19	401 030 9207	CARBON 3.3K JA 1/8W	1
R20	401 030 9702	CARBON 33K JA 1/8W	1
R21	401 030 9207	CARBON 3.3K JA 1/8W	1
R22	401 030 0709	CARBON 22K JA 1/8W	1
R23	401 028 3200	CARBON 1K JA 1/8W	1
R24	401 028 3705	CARBON 10K JA 1/8W	1
R26	401 031 2405	CARBON 3.9K JA 1/8W	1
R27	401 031 2405	CARBON 3.9K JA 1/8W	1
R28	401 032 4606	CARBON 6.8K JA 1/8W	1
R29	401 032 4606	CARBON 6.8K JA 1/8W	1
R30	401 029 1502	CARBON 15K JA 1/8W	1
R31	401 029 1502	CARBON 15K JA 1/8W	1
R32	401 021 1906	CARBON 560 JA 1/4W	1
R33	401 056 2909	OXIDE-MT 47 JB 1/2W	1
R34	401 028 2609	CARBON 100 JA 1/8W	1
R35	401 028 2609	CARBON 100 JA 1/8W	1
R36	401 028 4207	CARBON 100K JA 1/8W	1
R37	401 029 9706	CARBON 220 JA 1/8W	1
R39	401 029 0406	CARBON 150 JA 1/8W	1
R40	401 018 1605	CARBON 33 JA 1/4W	1
R41	401 029 9102	CARBON 22 JA 1/8W	1
R42	401 032 4002	CARBON 680 JA 1/8W	1
R43	401 028 4207	CARBON 100K JA 1/8W	1
R44	401 031 7202	CARBON 47K JA 1/8W	1
R46	401 012 4503	CARBON 100 JA 1/4W	1
R48	401 056 2909	OXIDE-MT 47 JB 1/2W	1
R49	401 028 3200	CARBON 1K JA 1/8W	1
R50	401 032 7805	CARBON 82 JA 1/8W	1
R51	401 031 7202	CARBON 47K JA 1/8W	1
R52	401 031 7202	CARBON 47K JA 1/8W	1
R53	401 032 4002	CARBON 680 JA 1/8W	1
R54	401 030 9702	CARBON 33K JA 1/8W	1
R55	401 029 9102	CARBON 22 JA 1/8W	1
R56	401 030 9702	CARBON 33K JA 1/8W	1
R57	401 029 9102	CARBON 22 JA 1/8W	1
R58	401 032 0103	CARBON 560 JA 1/8W	1
		POWER P.C.B. ASSY	
56	620 185 3605	Power P.C.B. Assy	1
W801	620 018 0764	Connector 2P Assy	1
CN4	620 185 3544	Connector 2P Assy	1
F801⚠	423 006 1701	FUSE 250V 2A	1
FH801	620 017 2721	Fuse Clip	2
J801⚠	620 019 2705	AC DC Power Socket	1
S801⚠	620 015 4017	Voltage Selector	1
D801	407 005 2105	DIODE DS135D-KB3	1
D802	407 005 2105	DIODE DS135D-KB3	1
D803	407 005 2105	DIODE DS135D-KB3	1
D804	407 005 2105	DIODE DS135D-KB3	1
D805	407 063 8903	ZENER DIODE MTZJ5.6C	1
C801	403 074 2701	CERAMIC 0.047U Z 50V	1
C802	403 074 2701	CERAMIC 0.047U Z 50V	1
C803	403 074 2701	CERAMIC 0.047U Z 50V	1
C804	403 074 2701	CERAMIC 0.047U Z 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
C805	403 072 2703	CERAMIC 0.022U Z 50V	1
C806	403 039 7901	ELECT 100U M 10V	1
C807	403 038 2402	ELECT 100U M 6.3V	1
C808	403 068 9402	CERAMIC 100P K 50V	1
R801	401 060 3008	OXIDE-MT 220 JA 1W	1
R802	401 023 0709	CARBON 82 JA 1/4W	1
CONTROL P.C.B. ASSY			
101	620 080 6589	Control P.C.B. Assy	1
F601	620 017 0703	Protector, ICP-N20	1
P601	620 006 2848	Potentiometer 5KB	1
S601	620 016 2159	Leaf Switch (HIGH SPEED)	1
Q601	405 019 2708	TR 2SC536-F-NP-AA	1
D601	407 005 4703	DIODE DS446-BT	1
D602	407 005 4703	DIODE DS446-BT	1
D603	407 007 9904	DIODE GMA01-BT	1
C601	403 042 3600	ELECT 100U M 16V	1
R601	401 030 9207	CARBON 3.3K JA 1/8W	1
R602	401 028 7109	CARBON 1.2K JA 1/8W	1
R603	401 029 0406	CARBON 150 JA 1/8W	1
R604	401 031 1903	CARBON 390 JA 1/8W	1
R605	401 016 4806	CARBON 22K JA 1/4W	1

NOTES:

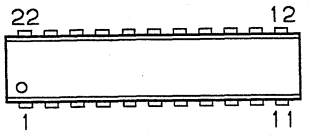
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

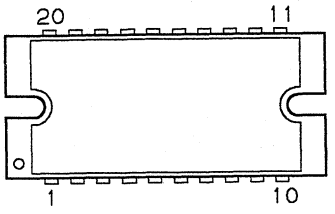
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

IC & TRANSISTOR LEAD IDENTIFICATION (Continued)

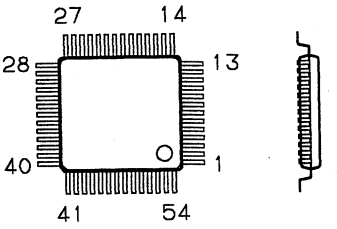
LA1265 TOP VIEW



LA4505 TOP VIEW

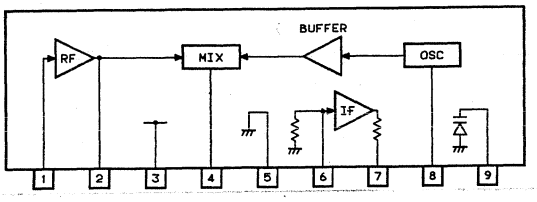


UPD1715G-111 TOP/SIDE VIEWS

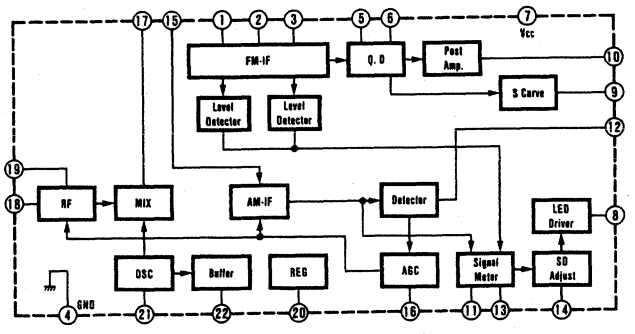


IC BLOCK DIAGRAM

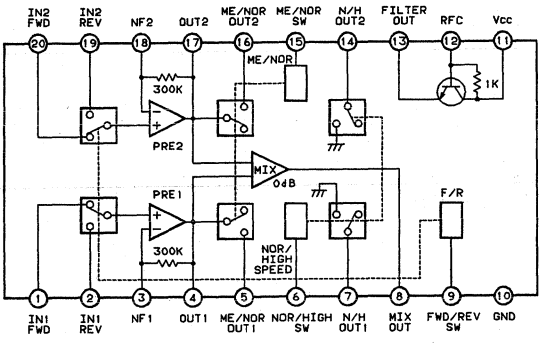
BA4412 BLOCK DIAGRAM



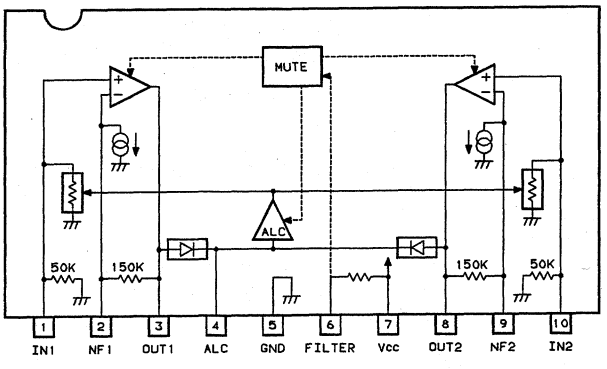
LA1265 BLOCK DIAGRAM



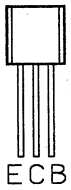
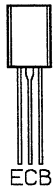
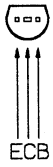
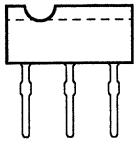
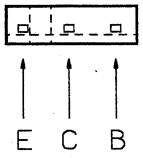
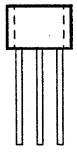
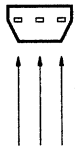
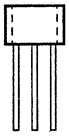
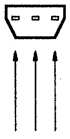
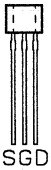
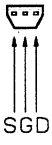
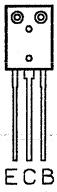
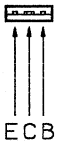
LA3246 BLOCK DIAGRAM



BA3312 BLOCK DIAGRAM



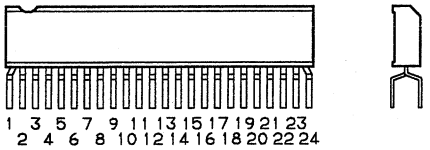
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SC1740 2SC3331 2SC536			2SD400		
2SC2021			2SD1012		
2SK212			2SK427		
2SB1166					

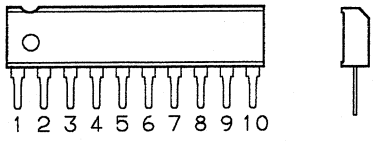
TERMINAL NAME

B → BASE	S → SOURCE
C → COLLECTOR	G → GATE
E → EMITTER	D → DRAIN

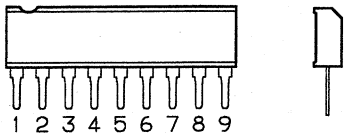
BA3824LS FRONT/SIDE VIEWS



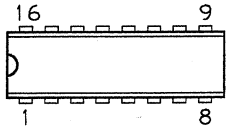
BA3312N FRONT/SIDE VIEWS



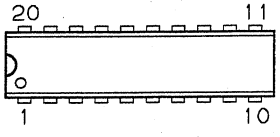
BA4412 FRONT/SIDE VIEWS



BA1355 TOP VIEW

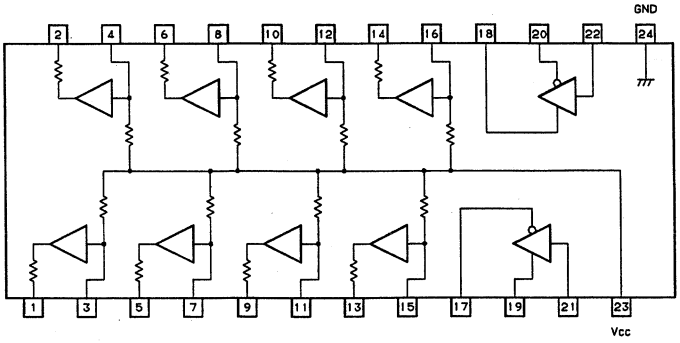


LA3246 TOP VIEW

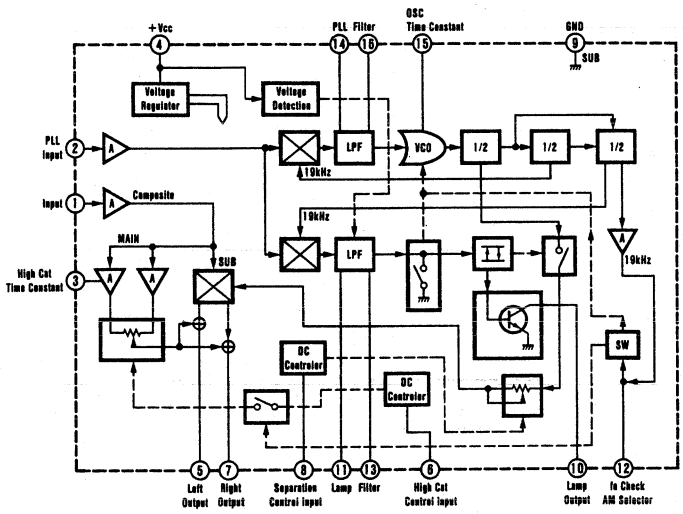


IC BLOCK DIAGRAM (Continued)

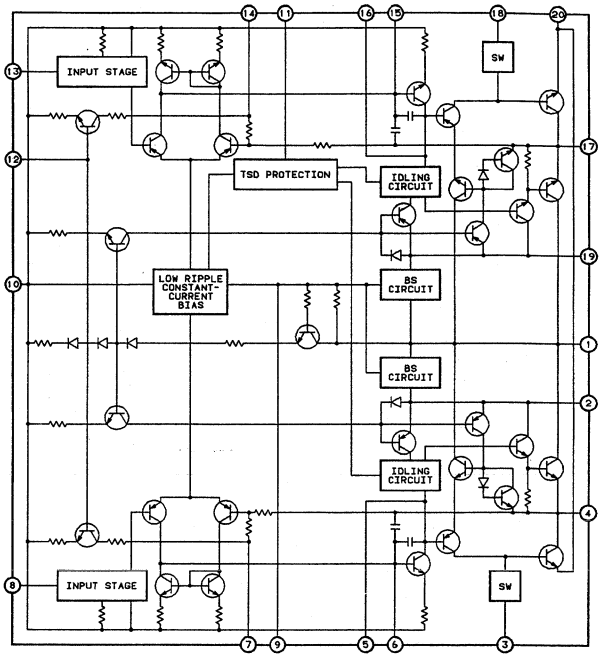
BA3824LS BLOCK DIAGRAM



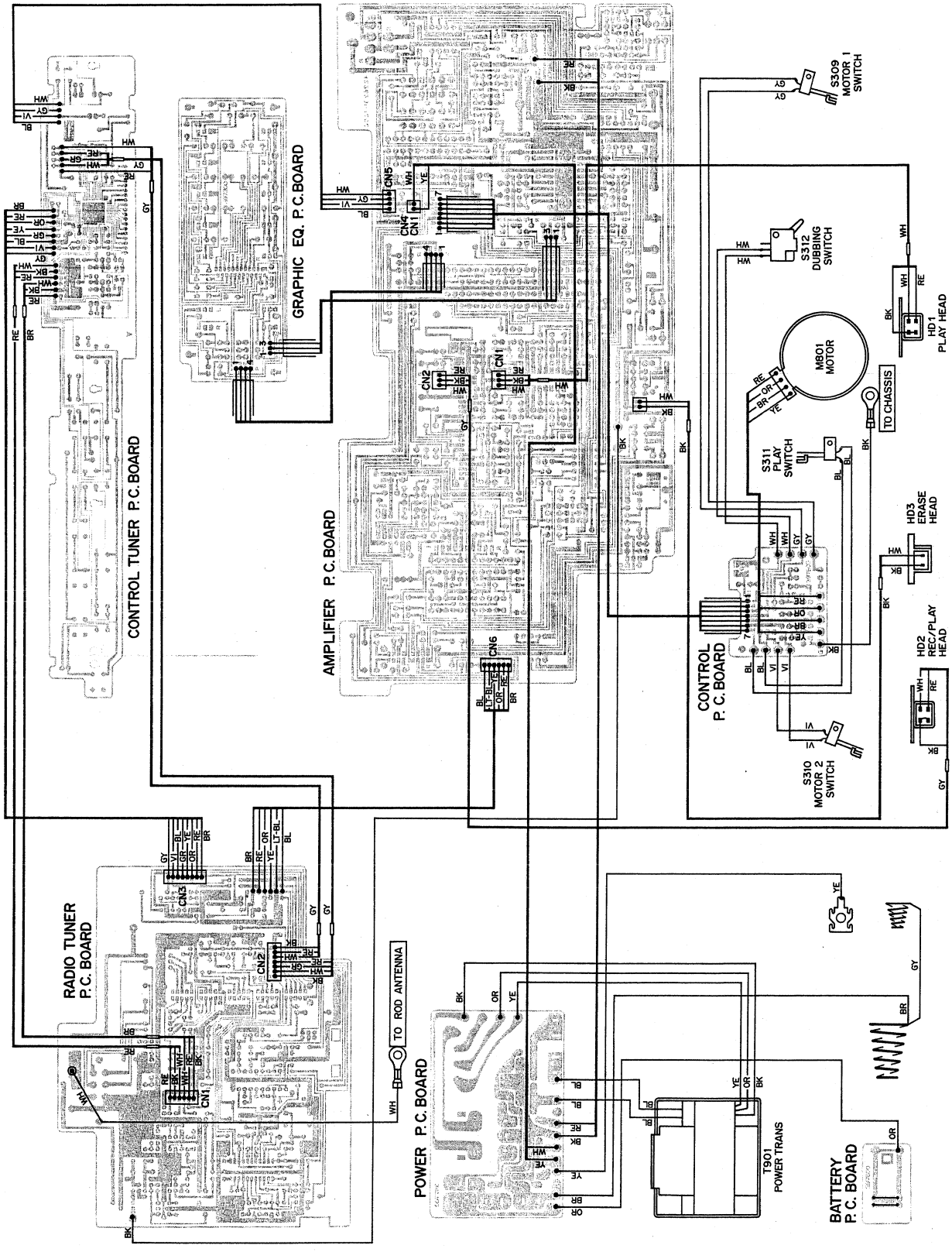
BA1355 BLOCK DIAGRAM



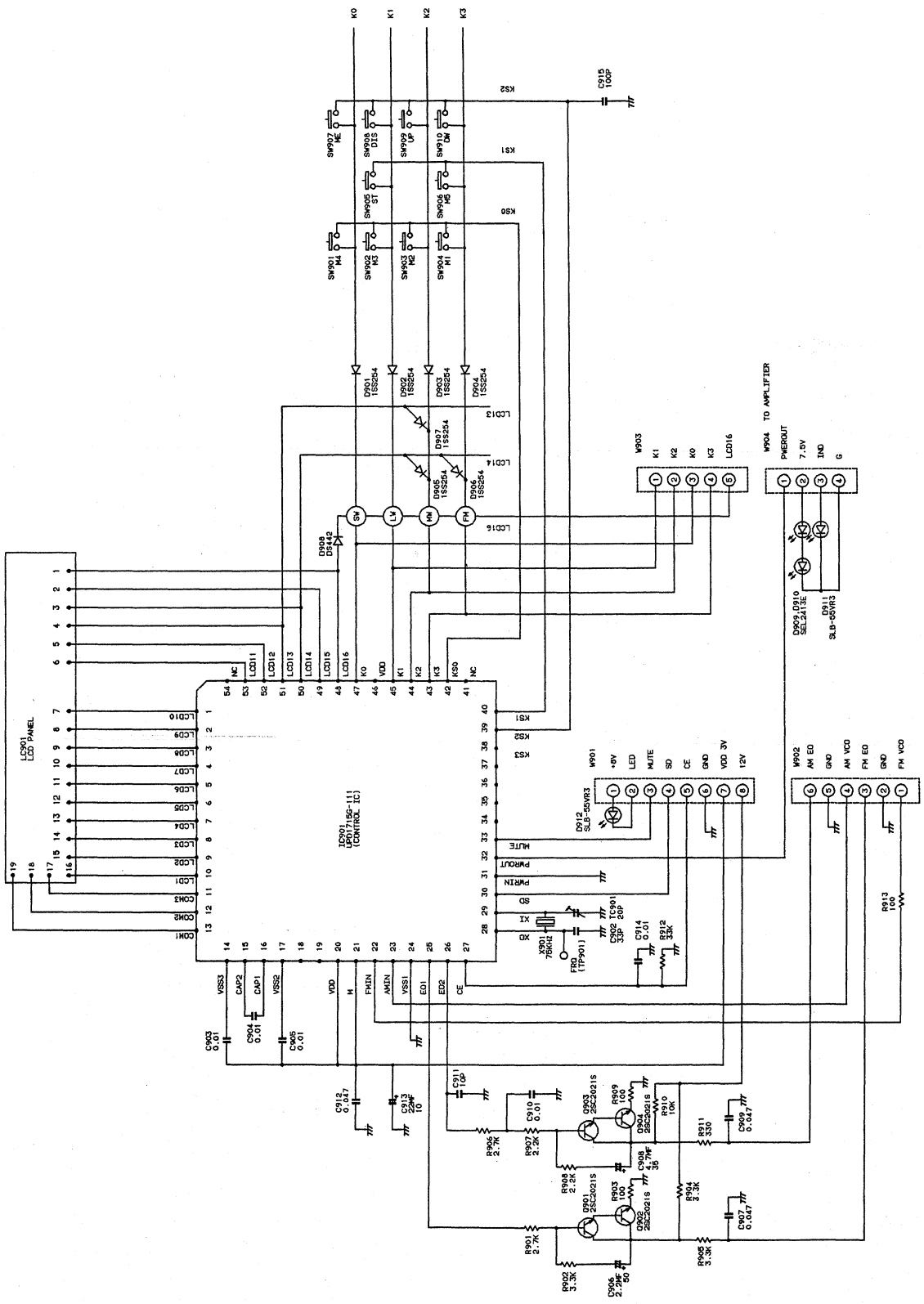
LA4505 BLOCK DIAGRAM



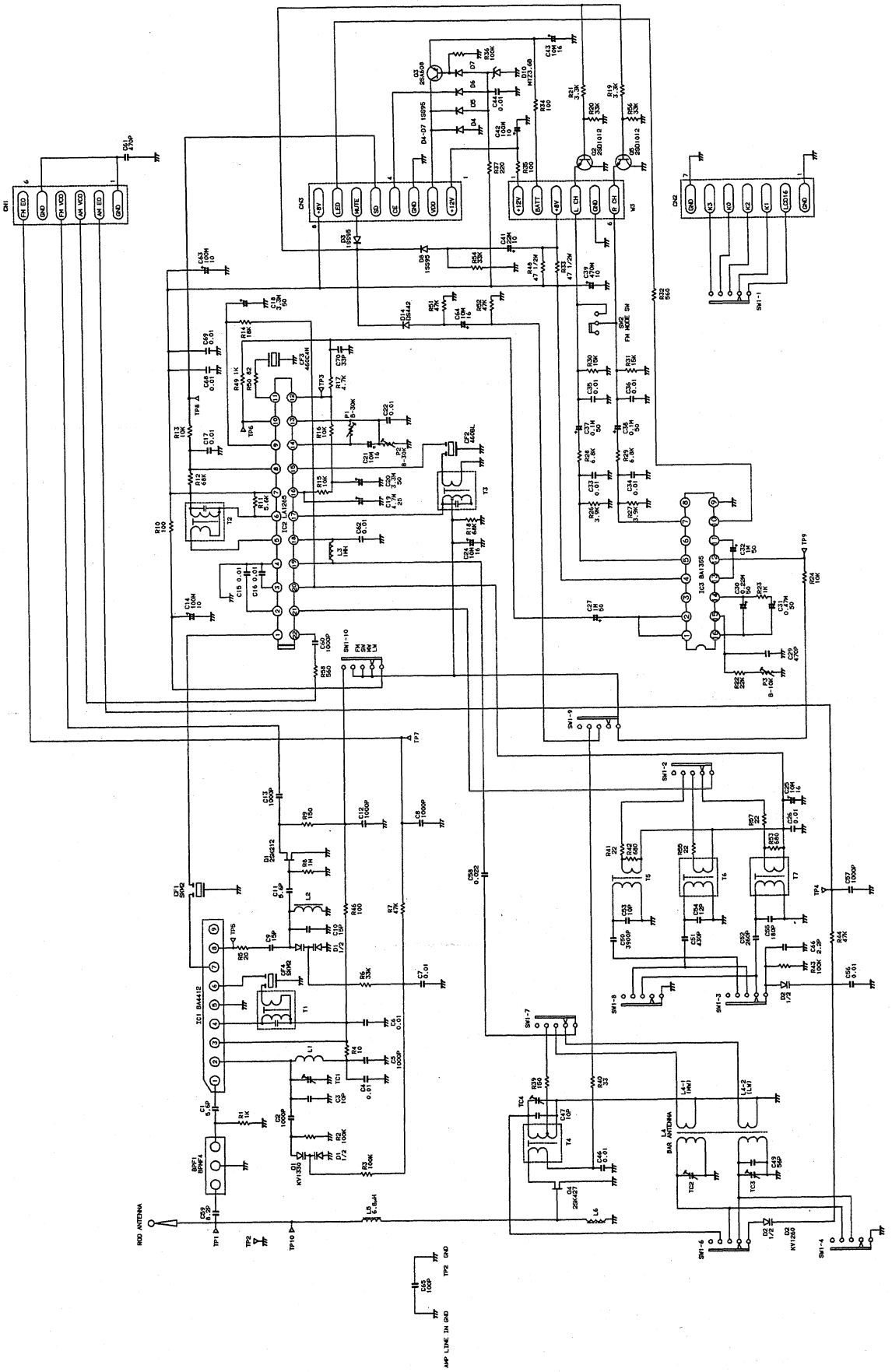
WIRING DIAGRAM



SCHEMATIC DIAGRAM (Control Tuner)

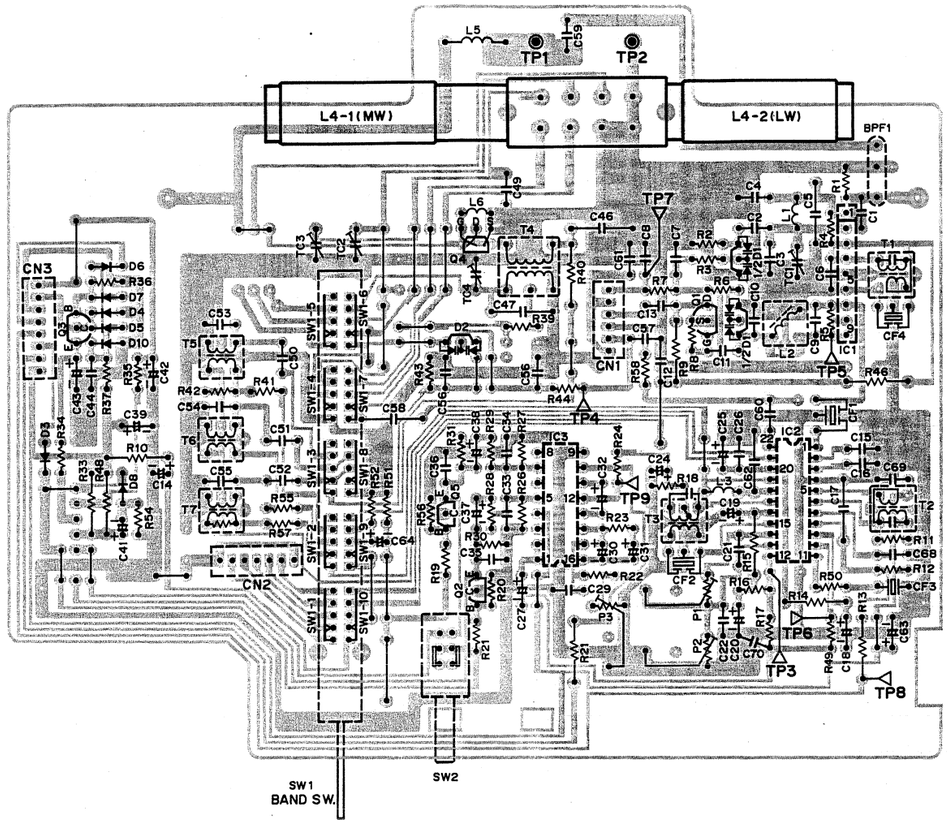


SCHEMATIC DIAGRAM (Radio Tuner)



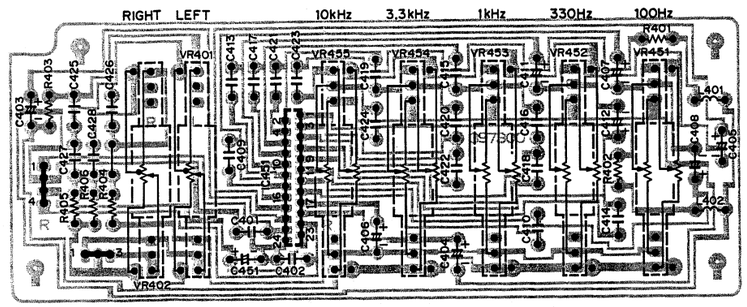
NOTE:
The **D1** consists of 1/2 D1 and 1/2 D1 which have the equivalent characteristics. When replacing, obtain a new pair of D1 (1/2 D1 and 1/2 D1) together.

RADIO TUNER P.C.BOARD
(BOTTOM VIEW)

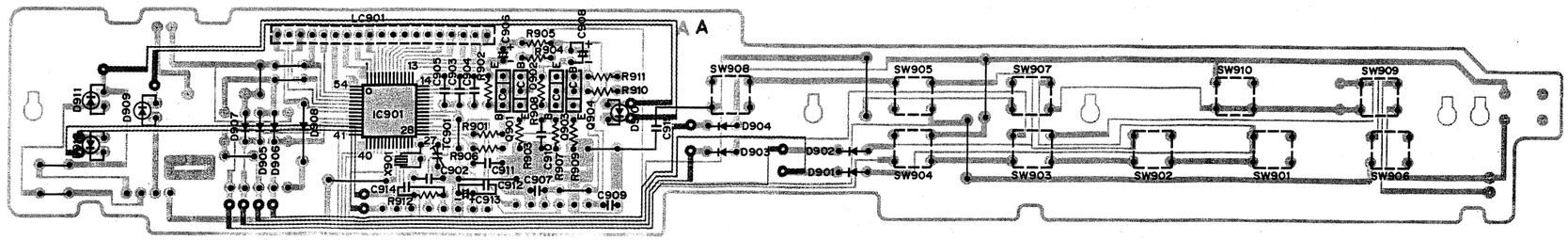


NOTE:
The **D1** consists of 1/2 D1 and 1/2 D1 which have the equivalent characteristics. When replacing, obtain a new pair of D1 (1/2 D1 and 1/2 D1) together.

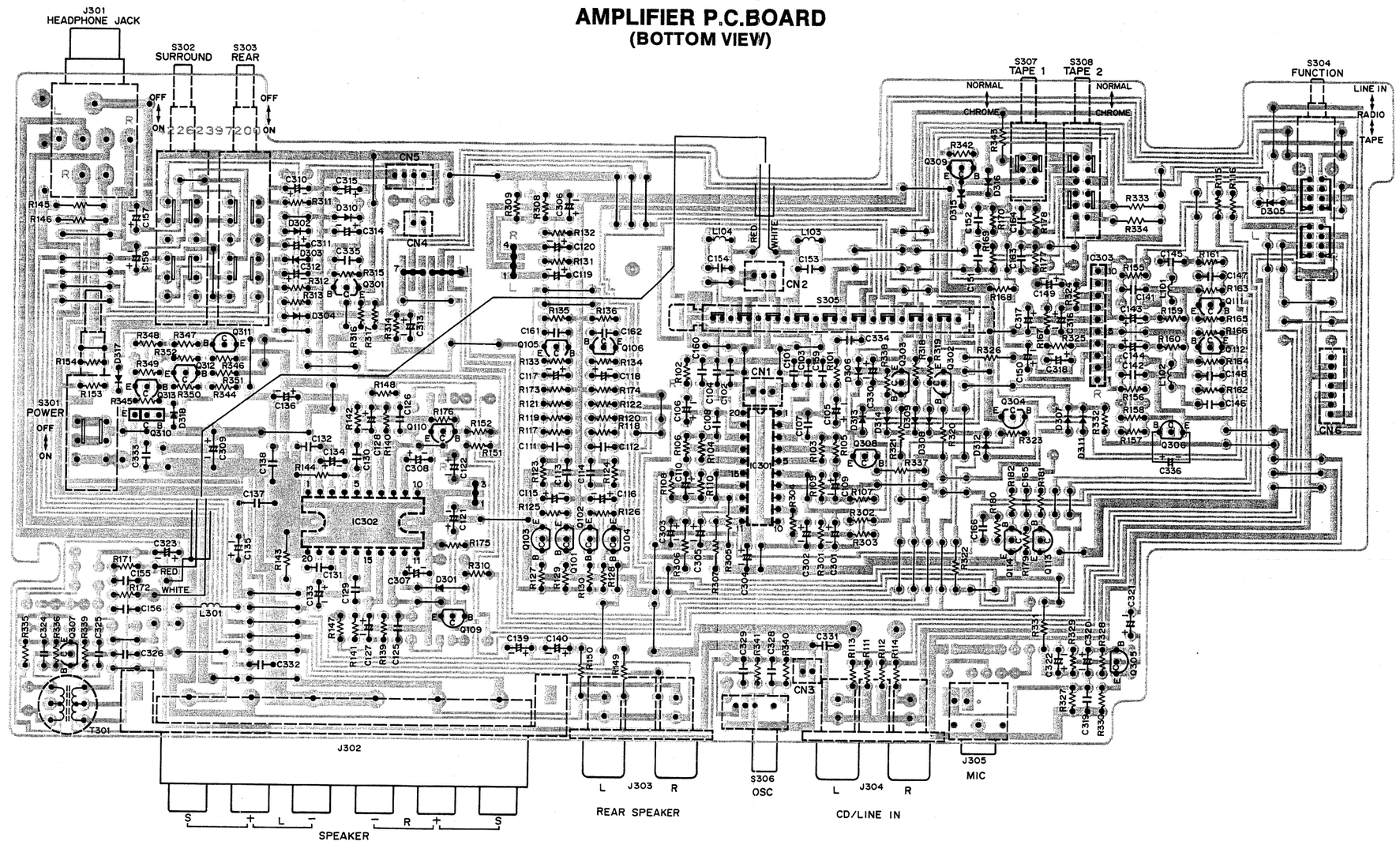
GRAPHIC EQUALIZER P.C.BOARD
(BOTTOM VIEW)



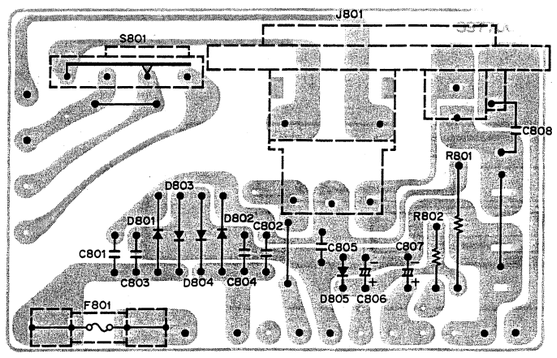
CONTROL TUNER P.C.BOARD
(BOTTOM VIEW)



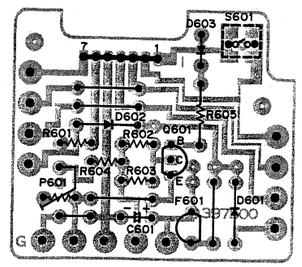
AMPLIFIER P.C.BOARD
(BOTTOM VIEW)



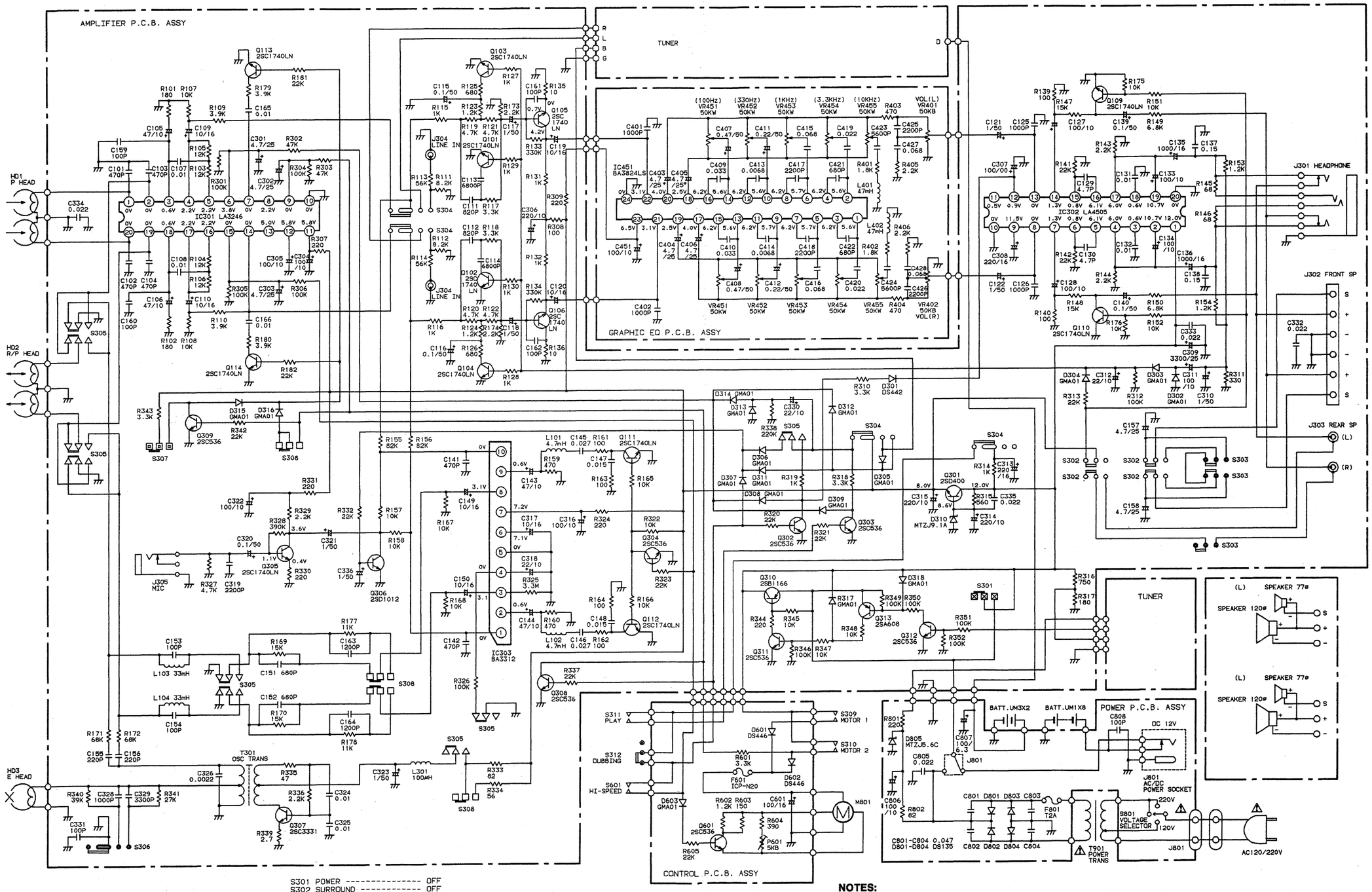
POWER SUPPLY P.C.BOARD
(BOTTOM VIEW)



CONTROL P.C.BOARD
(BOTTOM VIEW)



SCHEMATIC DIAGRAM (Amplifier)



NOTES:

1. All resistors values are indicated in "ohm" (K = 10^3, M = 10^6).
2. All capacitors values are indicated in "μF" (P = 10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground.
   c. No signals at input terminals.
   d. AC input at 220 volts 50 Hz.
4. This is a basic schematic diagram.

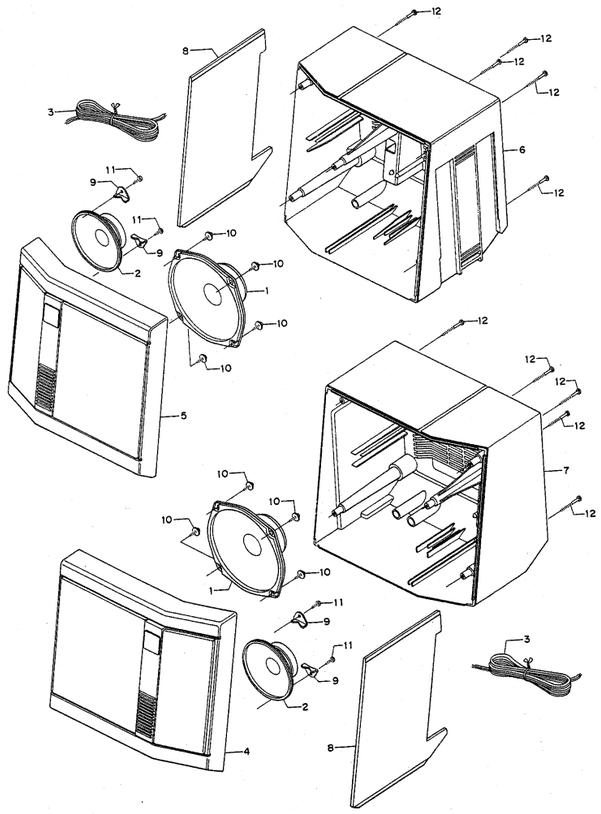
SPEAKER BOX PARTS LIST

Ref. No.	Part No.	Description	Q'ty
SPEAKER BOX			
	620 123 9171	Sheet	4
	620 123 9188	Sheet	4
1	620 002 9780	Speaker 120mm (3.2Ω) [SP101]	1
1	620 002 9780	Speaker 120mm (3.2Ω) [SP102]	1
2	620 002 9797	Speaker 77mm (6Ω) [SP103]	1
2	620 002 9797	Speaker 77mm (6Ω) [SP104]	1
3	620 024 3407	Parallel Wire 3	2
4	620 070 9880	Speaker Box Top Right Assy	1
5	620 070 9903	Speaker Box Top Left Assy	1
6	620 090 7675	Speaker Box Bottom Left	1
7	620 090 7682	Speaker Box Bottom Right	1
8	620 091 8589	Board Speaker	2
9	620 120 7699	Bracket Fix Speaker	4
10	620 123 0802	Screw	8
11	411 022 2802	SCR S-TPG FLT 3X10	4
12	411 001 1703	SCR S-TPG PAN 3X30	10

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

SPEAKER BOX EXPLODED VIEW



FISHER

FISHER Hi-Fi Europa Vertriebs GmbH

Stahlgruberring 4 Tel: 089/420 45-0
8000 München 82 Tlx: 524033

Technisches Labor/ Durchwahl -120/121
Qualitätskontrolle

Funkstörmeßlabor -127/128

Service-Zentrale
- Color TV -166
- Hi-Fi/Audio -168
- Video -172
- Autoradio -170
- Ersatzteillager -155/156
- Techn. Schulung -174

Weitere Service-Zentralen in BRD (keine Ersatzteilbestellungen)

Offenbach/ Frankfurt	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Hamburg	Spaldingstraße 1 2000 Hamburg	Tel: 040/23 12 23/24 Tlx: 2 173 839
Military	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Ditzingen	Max-Eyth-Straße 11 7257 Ditzingen	Tel: 07156/50 88 Tlx: 7 245 278
Düsseldorf-Erkrath	Albert-Einstein-Straße 8 4006 Erkrath 1	Tel: 0211/200 05-0 Tlx: 8 588 563	Berlin (Fisher Vertragswerkstatt)	Drewitz & Kaulbach Eisenacher Straße 53 1000 Berlin 62	Tel: 030/781 20 01 Tlx: 186 460

Unser FISHER-Team steht Ihnen jederzeit gerne zur Verfügung. Ersatzteilbestellungen wickeln Sie bitte ausschließlich mit unserer Service-Zentrale München ab.
Senden Sie uns im Garantiefall die ausgefüllte Garantiekarte ein. Bei unverkauften Lagergeräten des Fachhandels gilt als Garantienachweis eine eidesstattliche Versicherung mit eingetragener Modellbezeichnung und Geräte-Nummer oder ein Liefernachweis. Die gleiche Regelung besteht auch für Reparaturaufträge.
Bitte geben Sie unbedingt die Ersatzteil-Nummer und die Modellbezeichnung an.
Sie sparen so wertvolle Zeit. Vielen Dank.

A47500 July/'88/2,000/H **Printed in Japan**